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Part Two

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SILVER BOW CREEK

REMEDIAL INVESTIGATION FINAL REPORT
APPENDIX C, PART 2

Attachments

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WARM SPRINGS PONDS

INVESTIGATION

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SILVER BOW CREEK REMEDIAL INVESTIGATION
DRAFT FINAL REPORT

WARM SPRINGS PONDS INVESTIGATION
PART 2: ATTACHMENTS

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March 1987

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ATTACHMENT I
LOCATIONS OF SURFACE-WATER AND POINT SOURCE SAMPLING SITES

MultiTech

SURFACE WATER INVENTORY FORM

STATION # SS-16

LOCATION: T3N R10W Section 01 BCB

DESCRIPTION: On Silver Bow Creek near Fairmont Hot Springs.

DISCHARGE MEASUREMENT METHOD: Standard AA or Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading west on Interstate 90 exit Gregson and Fairmont Hot Springs. Head west towards Fairmont Hot Springs. Site is located at creek crossing.

COMMENTS: Sample site is located 80 feet upstream at marked stake.

SURFACE WATER INVENTORY FORM

STATION # SS-17

LOCATION: T4N R10W Section 14 ABA

DESCRIPTION: On Silver Bow Creek near Opportunity.

DISCHARGE MEASUREMENT METHOD: Standard AA or Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading west on Interstate 90 exit Anaconda. Head toward Anaconda and turn right into Opportunity at sign. Follow street to stop sign and turn right onto Stewart Street. Head out of town to bridge where street crosses Silver Bow Creek. Permanent gage is on upstream left bank.

COMMENTS: Sample site is located 50 feet upstream from gage.

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SURFACE WATER INVENTORY FORM

STATION # SS-18

LOCATION: T4N R10W Section 02 DAD

DESCRIPTION: On Mill Willow Bypass at frontage road crossing.

DISCHARGE MEASUREMENT METHOD: Standard AA or Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading east out of Opportunity on Stewart Street. continue to stop sign and turn left onto frontage road. Head north on frontage road to second bridge crossing. Site is located on upstream side of bridge.

COMMENTS: Sample site is located at marked stake.

SURFACE WATER INVENTORY FORM

STATION # SS-19

LOCATION: T4N R10W Section 01 CBD

DESCRIPTION: On Silver Bow Creek above Warm Springs Pond System and upper pH shack.

DISCHARGE MEASUREMENT METHOD: Standard AA or Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading east out of Opportunity on Stewart Street to stop sign. Continue straight over Interstate on dirt road north towards Warm Springs Ponds. Turn left at upper pH shack to locked gate. Permanent gage is located below control gates on left bank.

COMMENTS: Sample site is located 100 feet above control gates.

SURFACE WATER INVENTORY FORM

STATION # SS-20

LOCATION: T5N R9W Section 30 CAB

DESCRIPTION: Pond #3 of Warm Springs Pond System.

DISCHARGE MEASUREMENT METHOD: NA

SAMPLING METHOD: Kemmerer

CATEGORY OF ANALYSIS: II

ROAD LOG: Site is located halfway between west and east decant towers to Pond #3. Access is gained from dirt road which is east of ponds and Anaconda gates, which are located at all three ponds.

COMMENTS: Sample site is approximately 100 yds. from berm. Sample was collected from a boat in summer and by cutting through ice in winter.

SURFACE WATER INVENTORY FORM

STATION # SS-21

LOCATION: T5N R9W Section 30 DBC

DESCRIPTION: East decant discharge from Pond #3.

DISCHARGE MEASUREMENT METHOD: Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: III

ROAD LOG: Access gained into pond system through Anaconda gates. From Pond #3 berm turn left onto road which is on west side of decant discharge. Site is located 300 yds. down-stream from discharge point.

COMMENTS: Sample site is located at marked stake.

SURFACE WATER INVENTORY FORM

STATION # SS-22

LOCATION: T5N R9W Section 30 BBD

DESCRIPTION: West decant discharge from Pond #3.

DISCHARGE MEASUREMENT METHOD: Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: III

ROAD LOG: Access gained into pond systems through Anaconda gates. Road connecting Pond #2 and Pond #3 passes the decant discharge. Site is located 100 yds. downstream from out-fall.

COMMENTS: Sample site is located at marked stake.

SURFACE WATER INVENTORY FORM

STATION # SS-23

LOCATION: T5N R10W Section 36 DCC

DESCRIPTION: South discharge from Opportunity Ponds.

DISCHARGE MEASUREMENT METHOD: Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading north on frontage road from Opportunity, site is located at third bridge crossing on highway.

COMMENTS: Sample site is located just downstream from culvert out-fall and upstream side of bridge.

SURFACE WATER INVENTORY FORM

STATION # SS-24

LOCATION: T5N R10W Section 36 DBB

DESCRIPTION: North discharge from Opportunity ponds.

DISCHARGE MEASUREMENT METHOD: Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Heading north on frontage road from Opportunity, continue to fourth bridge crossing. Site is located on downstream side of bridge.

COMMENTS: Sample site is located under bridge.

SURFACE WATER INVENTORY FORM

STATION # SS-25

LOCATION: T5N R9W Section 19 BBD

DESCRIPTION: Mill Willow Bypass above Pond 2 discharge.

DISCHARGE MEASUREMENT METHOD: Pygmy meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: II

ROAD LOG: Access to pond system gained through Anaconda gates. Road connecting Pond #1 and Pond #3 follows the bypass. After crossing over the Pond #2 discharge, turnright onto access road which dead ends at Mill Willow Bypass. Site is located upstream, 200 feet above the Pond #2 discharge.

COMMENTS: Sample site is located at marked stake.

SURFACE WATER INVENTORY FORM

STATION # SS-26

LOCATION: T5N R9W Section 19 DBC

DESCRIPTION: Pond #2 of Warm Springs Ponds System.

DISCHARGE MEASUREMENT METHOD: NA

SAMPLING METHOD: Kemmerer

CATEGORY OF ANALYSIS: II

ROAD LOG: Access to pond system gained through Anaconda gates. Follow road from Pond #1 gate, continue around Pond #1 berm to discharge from Pond #2. Turn left and follow road past Pond #2 gates and up onto Pond #2 berm. Site is located at first pullout past tree.

COMMENTS: Sample site is approximately 100 yds. out from berm. Sample was collected from a boat in summer and by cutting through ice in winter.

SURFACE WATER INVENTORY FORM

STATION # SS-27

LOCATION: T5N R9W Section 20 CCB

DESCRIPTION: Warm Springs Pond #2 pumpback outfall.

DISCHARGE MEASUREMENT METHOD: Bucket and stop watch or estimation.

SAMPLING METHOD: Grab

CATEGORY OF ANALYSIS: II

ROAD LOG: Follow dirt road around the east side the Warm Springs Pond System to Pond #2. Turn left to berm on Pond #2. Site is located on left side of berm just before gate entrance.

COMMENTS: Sample is taken from pipe outfall.

SURFACE WATER INVENTORY FORM

STATION # SS-27A

LOCATION: T5N R9W Section 20 BBC

DESCRIPTION: Warm Springs Pond #1 pumpback outfall.

DISCHARGE MEASUREMENT METHOD: Bucket and stop watch or estimation.

SAMPLING METHOD: Grab

CATEGORY OF ANALYSIS: II

ROAD LOG: From Warm Springs exit off the Interstate, head east for 1/2 mile to dirt access road on right. Follow this road, bearing left, to lower pH shack and Pond #1 access gate. Site is located at pH shack at the right of the lime chute.

COMMENTS: Sample is taken from pipe outfall.

POINT SOURCE INVENTORY FORM

STATION # PS-11A

LOCATION: T5N R9W Section 19 CBB

DESCRIPTION: Wildlife pond discharge at Warm Springs Pond System.

DISCHARGE MEASUREMENT METHOD: Pygmy Meter

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: III

ROAD LOG: Follow road around the Pond 2 berm. Park at end of Pond 2 where Wildlife Pond discharge channel is visible.

COMMENTS: Sample site is located about 20 feet above confluence with Mill Willow Bypass at the head of a riffle.

POINT SOURCE INVENTORY FORM

STATION # PS-12

LOCATION: T5N R9W Section 19 BBD

DESCRIPTION: Warm Springs Pond 2 discharge.

DISCHARGE MEASUREMENT METHOD: Standard AA or Pygmy Meter.

SAMPLING METHOD: EDI

CATEGORY OF ANALYSIS: III

ROAD LOG: Access gained into pond systems through Anaconda gates. Follow road around Pond 1 to Pond 2. Turn left onto road which follows Pond 2 discharge upstream.

COMMENTS: Sample site is located about 200 feet upstream from culvert road crossing.

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ATTACHMENT II

SILVER BOW CREEK CERCLA RI FIELD PARAMETER MEASUREMENT TECHNIQUES, SAMPLE COLLECTION PROCEDURES, AND DECONTAMINATION PROCEDURES

FIELD PARAMETER MEASUREMENT TECHNIQUES

All field measurements performed during the Silver Bow Creek RI were made utilizing the same set of field instrments. All equipment was calibrated at a frequency and to an accuracy consistent with specific manufacturer's recommendations. Duplication measurements of field parameters were made at prescribed frequencies to check data reproducibility. As well, measurements of field blank samples were made to ascertain potential cross-contamination or procedural problems. Further discussion of field QA/QC procedures is contained in Appendix F, Laboratory Quality Assurance/Quality Control Program.

Water Level Measurements

Water level measurements were performed in a consistent manner throughout the duration of the RI. A datum was established for each well measured from which initial and subsequent water level measurements were made. The datum utilized was typically the top of the well casing on the north side.

Electric well probes were used to sound the depth to water. The same set of well probes were used throughout the study. Well probes were calibrated with a steel measuring tape periodically and adjustments were made to collected data when necessary. All measurements were made to the nearest 0.1 feet.

Temperature

Measurements of ground-water temperature were completed at all wells sampled during the RI. Field thermometers used were calibrated periodically to a factory-certified thermometer. Temperature of ground water was monitored during well evacuation; the final recorded temperature was obtained immediately following sample retrieval into a decontaminated beaker. All temperature measurements were recorded to the nearest 0.5°C.

pH

Field measurements of pH were performed on sample water collected in a decontaminated beaker. The same set of ph meters were used throughout the RI. pH meters were calibrated at the beginning and end of each sampling day and during the day when necessary. The following sequence was followed in obtaining field measurements of pH.

(1) Decontaminate pH probe with deionized water.

(2) Check pH against a pH 7 standard buffer solution; if pH reading is within 0.1 units of standard, proceed; if not, recalibrate instrument.

(3) Decontaminate pH probe with deionized water.

(4) Obtain pH readings from sample promptly until two successive readings are the same.

(5) Decontaminate equipment and record data on field forms.

Periodically, all pH meters used on the project were checked with a pH meter tester to insure all instruments were functioning properly. When field conditions (e.g. sub-zero temperatures) apparently affected the pH values obtained, appropriate notation was made on field forms.

Specific Conductance (SC)

Measurements of field specific electrical conductivity (SC) were made on sample water collected in a decontaminated beaker. All SC instruments were calibrated at the beginning and end of each samling day. Adjustments were made to collected data if results from the two calibrations were significantly different.

The following sequences was followed in obtaining field measurements of SC:

(1) Decontaminate SC probe with deionized water.
(2) Perform red-line test on instrument; adjust as necessary.
(3) Obtain SC and temperature readings from sample until two consecutive readings are the same.
(4) Record data and decontaminate equipment.

Final SC values were calculated on site to adjust for temperature and the cell factor for each instrument. A comparison of acquired data was made to previous data collected at a specific site as a final check.

Dissolved Oxygen

Dissolved oxygen (DO) measurements were obtained from ground-water samples collected in accordance with the following procedure:

(1) Decontaminate probe with deionized water; inspect probe membrane, replace when necessary.
(2) Calibrate meter for temperature and elevation according to manufacturer's recommendations.
(3) Obtain DO readings from sample until two consecutive readings are similar.
(4) Record data on field forms and decontaminate equipment.

Values of DO were obtained during well evacuation and were monitored for consistency. Reported DO values were recorded when DO had reached equilibrium during latter stages of the well evacuation process.

Eh

Redox potential (Eh) was measured in ground-water samples collected in a decontaminated beaker. The Eh instrument and probe were checked prior to each measurement in accordance with manufacturer's recommendations. Appropriate decontamination was completed prior and after each use of the probe. A direct reading of Eh was obtained from sample water once relative equilibrium had been achieved in water evacuated from the well. Reported values were recorded once two successive readings were similar.

Discharge

Two methodologies were used in determining discharge at surface-water and point-source sites. Both methods described are considered accurate methods for discharge determination, but all measurements made were rated based on field conditions and were only as good as those conditions allowed.

The first method, which was the one used most often, is the current-meter method. This procedure requires the use of either a pygmy current meter or a standard AA current meter. These meters are mounted on a top-setting wading rod which is equipped with a headset for velocity determination. Total discharge is determined by taking depth and velocity readings across a typical section of the stream at the midpoint of each section. The number of observations taken depends upon stream conditions and distribution of flow. Current meters were field-checked before and after all measurements by spin testing. Minimum spin test times are 30 seconds for pygmy current meter and 1 minute for standard AA current meter. The pygmy current meter was used most of the time with the AA meter being used on the downsteam sites of Silver Bow Creek and the Clark Fork River. The above described method is the same as used by the U.S. Geological Survey, described in the publication: U.S. Geological Survey Water-Supply Paper 2175.

Another method used to determine flow was time/volume. This was used only on small flows or pipe discharges.

SAMPLE COLLECTION PROCEDURES

Standard procedures also were used for collection of samples.

A depth-integrated DH-48 sampler was used to collect most samples. Two standard methods are used for sample collection with a DH-48: the first is Equal Discharge Increment (EDI), and the second is Equal Width Increment (EWI). Both methods were used, with the EDI preferred. Using the EDI method, samples were collected at the midpoint of a section which was of equal proportion to the total discharge. Usually four points were used. The EWI method is basically the same procedure, except width is the determinant for the collection points. On sites where the depths were too shallow to use the DH-48, samples were collected with the sample bottle using EDI or EWI procedure. The final method used for collection was a grab sample. This was used mostly on pipe discharges. Sample water collected in the DH-48 was transferred into 1-gallon plastic jugs. Once a sufficient amount of water was collected, it was mixed by shaking, and the sample bottles were filled.

All sample bottles and equipment used to filter or measure samples were rinsed three times with sample water before being used. Disposable 0.45 micron filters were used during the study period, as were glass filter units.

QUALITY CHECKS

Quality checks throughout the study period were in the form of field blanks and field duplicates: one field blank was collected for every 40 samples, and one field duplicate for every 20 samples.

Field procedures for field blanks were the same as for regular samples, with the exception of sample collection. Deionized water was transferred from a 5-gallon carboy into the DH-48 sampler, which was then transferred into the 1-gallon plastic jug.

Field duplicates were obtained by repeating all measurements and sample collection at a particular site. Throughout the study period, blanks and duplicates were changed from site to site to obtain representative data of all parameters analyzed.

Field checks also were performed on discharge measurement methods by triplicate measurements at the same site by three different crews.

Chain-of-custody and sample-analysis request forms were completed at each site before departure and turned in to the sample bank at the end of each day. All field information was recorded on field forms which were checked in the office and verified.

DECONTAMINATION PROCEDURES

All materials and equipment used during the Silver Bow Creek RI were subjected to an appropriate level of decontamination. The type of decontamination performed was based upon procedures described in the project quality assurance plan (MultiTech and Stiller and Associates 1984, Appendix F) as well as those appropriate to the task.

The following are summaries of decontamination protocol followed for specific work tasks completed during the RI. Rationale for specific decontamination procedures is described in the project QA/QC plan.

Monitoring Well Construction and Soil Sampling

All drilling equipment and materials were decontaminated prior to any drilling operations and between borings. All tools used for soil sampling and packaging, including knives, split-spoon samplers, etc. were decontaminated prior to the collection of each sample. All materials used during well construction (casing, caps, etc.) were also decontaminated prior to use and between sites.

The following sequence was used for decontamination of drilling equipment and supplies and soil sampling equipment.

(1) Scrubbed visually clean with a detergent solution and a stiff scrub brush.

(2) Rinsed with clean water.

(3) Rinsed with deionized water and allowed to air dry.

Well Development and Aquifer Testing

All equipment used for well development and aquifer testing was decontaminated prior to and after use at each well. This included decontamination of all piping, pumps, and surge blocks. The decontamination procedures were the same as those described previously for monitoring well construction.

Vadose Zone Monitoring Installations

Each lysimeter was decontaminated prior to installation by pumping approximately one liter of 8N hydrochloric acid through the apparatus in accordance with manufacturer's recommendations. This procedure was followed by pumping of approximately three liters of deionized water through each lysimeter to flush out any residual hydrochloric solution.

The lysimeters were installed in a 200 mesh silica-deionized water slurry, which was packed about the ceramic cup base of the unit. To dewater the silica slurry and to introduce formation water to the sampling apparatus, three bore volumes of water were evacuated and wasted prior to any sample collection efforts.

Tensiometers arrived on-site in a clean condition. The units were filled with a deionized water and ethylene-glycol solution to protect against freezing. Since tensiometers were not used for sample collection, no further decontamination of the units was completed.

Ground-Water Sampling

PVC and Teflon bailers utilized in ground-water sample collection were decontaminated before and after each use by a detergent wash, clean water rinse, dilute nitric acid rinse, and a deionized water rinse. The hoisting line for the bailer was decontaminated in a similar manner prior to its use at each well.

Bladder pumps and associated piping used for sampling were decontaminated using the following procedure:

(1) Scrubbed clean with detergent solution and stiff brush
(2) Rinse with clean water
(3) Rinse with 10% HNO_3
(4) Deionized water rinse (three times)

Surface-Water Sampling

Decontamination procedures consisted of sequential rinsing with Liquinox, deionized water, dilute nitric acid, deionized water, hexane, and finally deionized water. For samples collected farther

downstream (below SS-14), decontamination procedures were reduced to simply a rinse with dilute nitric acid and then deionized water, due to the absence of oil and grease. The above mehtods were used on all sample collection and analysis equipment and were performed at each site prior to collection.

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ATTACHMENT III

RI DATA

AVERAGE DAILY FLOWS FOR STATION SS19 FOR JUNE

DAY	AVE. FLOW (cfs)
1	103.67
2	144.61
3	126.89
4	116.82
5	114.92
6	110.39
7	104.24
8	80.53
9	74.39
10	70.52
11	63.80
12	60.94
13	57.21
14	56.96
15	54.38
16	48.58
17	46.25
18	43.74
19	42.38
20	44.74
21	46.40
22	44.07
23	42.07
24	41.78
25	41.29
26	44.28
27	43.02
28	38.94
29	36.63
30	36.19

AVERAGE MONTHLY FLOW = 66.02 CFS

MONTHLY DISCHARGE = 3929 ACRE FEET

INSTANTANEOUS MAXIMUM FLOW = 185.70 CFS

INSTANTANEOUS MINIMUM FLOW = 29.85 CFS

DAILY MAXIMUM FLOW = 144.61 CFS

DAILY MINIMUM FLOW = 36.19 CFS

AVERAGE DAILY FLOWS FOR STATION SS19 FOR JULY

DAY	AVE. FLOW (cfs)
1	38.00
2	37.01
3	34.72
4	33.56
5	32.89
6	30.52
7	30.94
8	31.52
9	32.18
10	32.83
11	32.70
12	36.23
13	36.48
14	33.86
15	32.20
16	31.31
17	52.97
18	37.05
19	34.36
20	32.37
21	32.70
22	31.74
23	32.33
24	35.90
25	35.07
26	34.96
27	32.27
28	33.35
29	37.70
30	39.55
31	43.65

AVERAGE MONTHLY FLOW = 34.93 CFS

MONTHLY DISCHARGE = 2148 ACRE FEET

INSTANTANEOUS MAXIMUM FLOW = 97.65 CFS

INSTANTANEOUS MINIMUM FLOW = 22.53 CFS

DAILY MAXIMUM FLOW = 52.97 CFS

DAILY MINIMUM FLOW = 30.52 CFS

AVERAGE DAILY FLOWS FOR STATION SS19 FOR AUG

DAY	AVE. FLOW (cfs)
1	39.32
2	46.45
3	59.94
4	40.11
5	36.39
6	37.89
7	33.47
8	26.44
9	26.96
10	25.99
11	60.04
12	49.34
13	43.07
14	36.24
15	27.92
16	28.48
17	28.77
18	28.33
19	27.69
20	27.43
21	27.16
22	28.47
23	27.28
24	25.52
25	24.32
26	21.18
27	20.50
28	23.47
29	25.13
30	26.45
31	27.88

AVERAGE MONTHLY FLOW = 32.50 CFS

MONTHLY DISCHARGE = 1999 ACRE FEET

INSTANTANEOUS MAXIMUM FLOW = 83.30 CFS

INSTANTANEOUS MINIMUM FLOW = 15.50 CFS

DAILY MAXIMUM FLOW = 60.04 CFS

DAILY MINIMUM FLOW = 20.50 CFS

AVERAGE DAILY FLOWS FOR STATION SS19 FOR SEPT

DAY	AVE. FLOW (cfs)
1	27.59
2	29.54
3	31.96
4	29.12
5	28.91
6	31.31
7	46.16
8	49.67
9	45.82
10	48.40
11	42.52
12	71.15
13	54.98
14	53.82
15	49.98
16	48.64
17	49.87
18	58.63
19	51.89
20	45.06
21	44.20
22	48.66
23	54.45
24	50.61
25	51.01
26	48.64
27	47.80
28	50.15
29	46.03
30	47.12

AVERAGE MONTHLY FLOW = 46.12 CFS

MONTHLY DISCHARGE = 2744 ACRE FEET

INSTANTANEOUS MAXIMUM FLOW = 108.78 CFS

INSTANTANEOUS MINIMUM FLOW = 20.84 CFS

DAILY MAXIMUM FLOW = 71.15 CFS

DAILY MINIMUM FLOW = 20.84 CFS

AVERAGE DAILY FLOWS FOR STATION SS19 FOR OCT

DAY	AVE. FLOW (cfs)
1	47.80
2	47.25
3	53.59
4	54.37
5	51.81
6	49.35
7	56.11
8	56.66
9	52.02
10	54.62
11	54.06
12	59.40
13	56.50
14	56.08
15	55.19
16	55.20
17	56.86
18	54.94
19	52.99
20	53.85
21	54.25
22	57.61
23	55.45
24	54.84
25	52.84
26	54.25
27	53.83
28	52.51
29	53.12
30	52.70
31	50.59

AVERAGE MONTHLY FLOW = 53.89 CFS

MONTHLY DISCHARGE = 3314 ACRE FEET

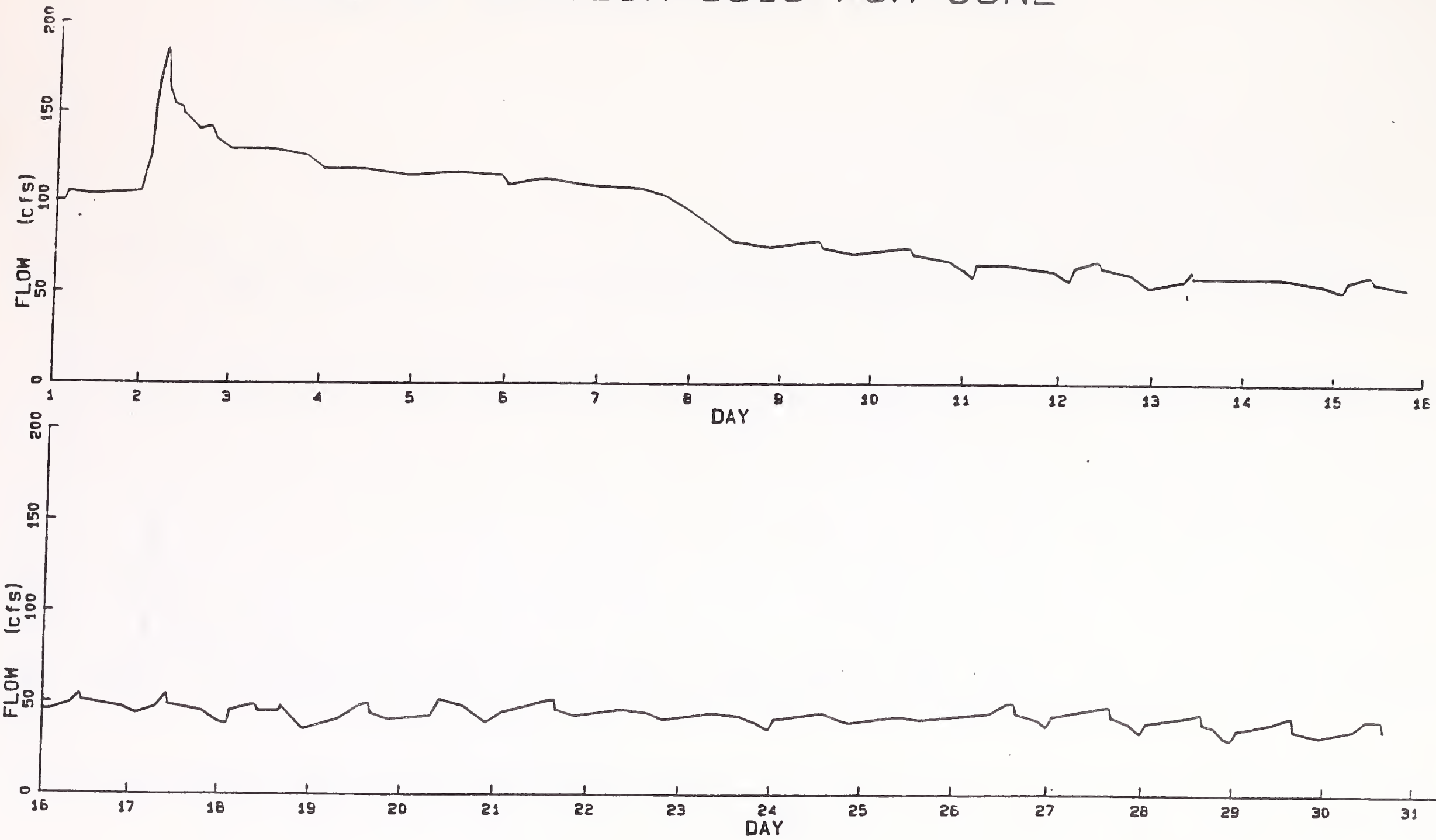
INSTANTANEOUS MAXIMUM FLOW = 105.12 CFS

INSTANTANEOUS MINIMUM FLOW = 42.82 CFS

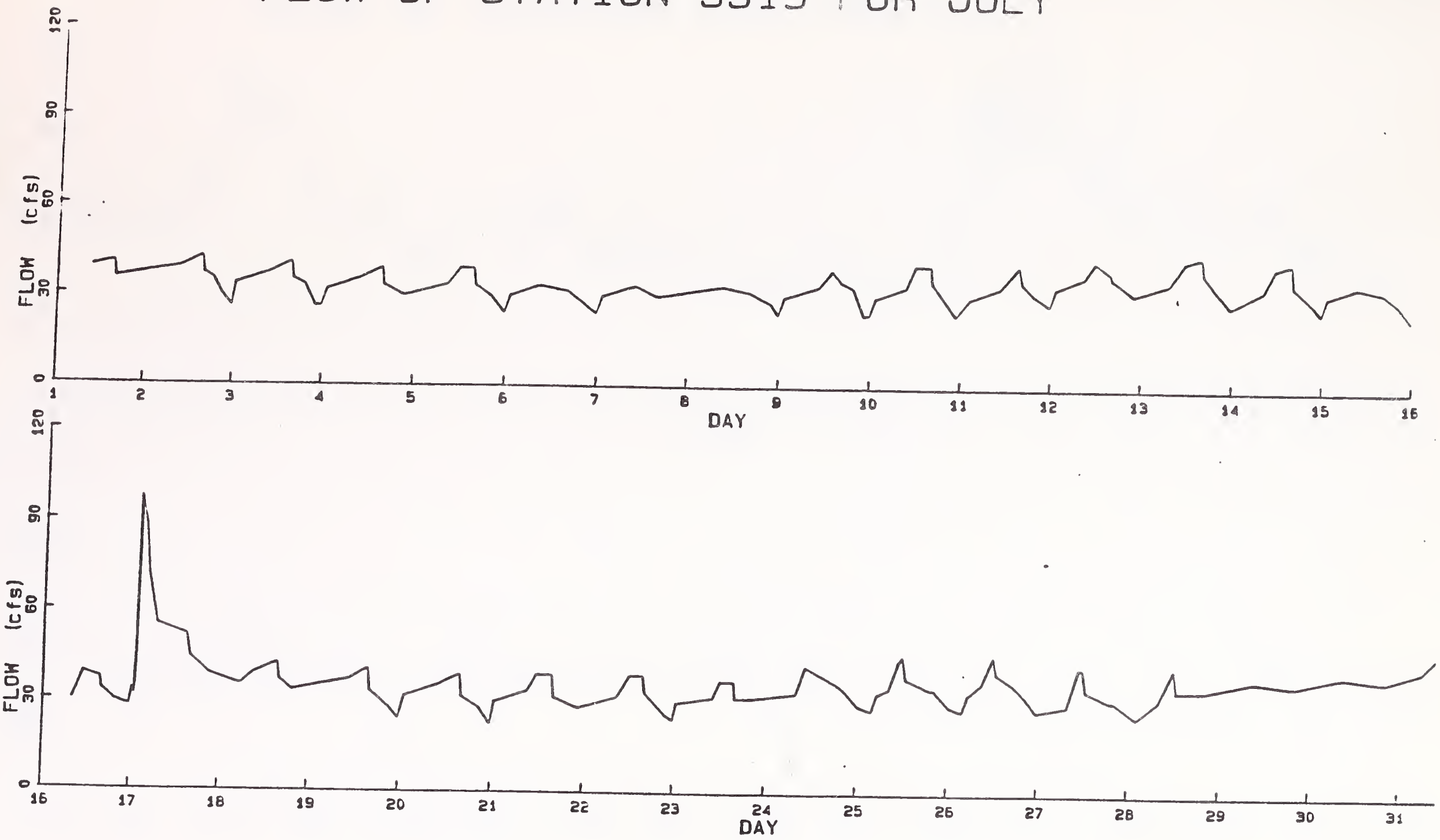
DAILY MAXIMUM FLOW = 59.40 CFS

DAILY MINIMUM FLOW = 42.82 CFS

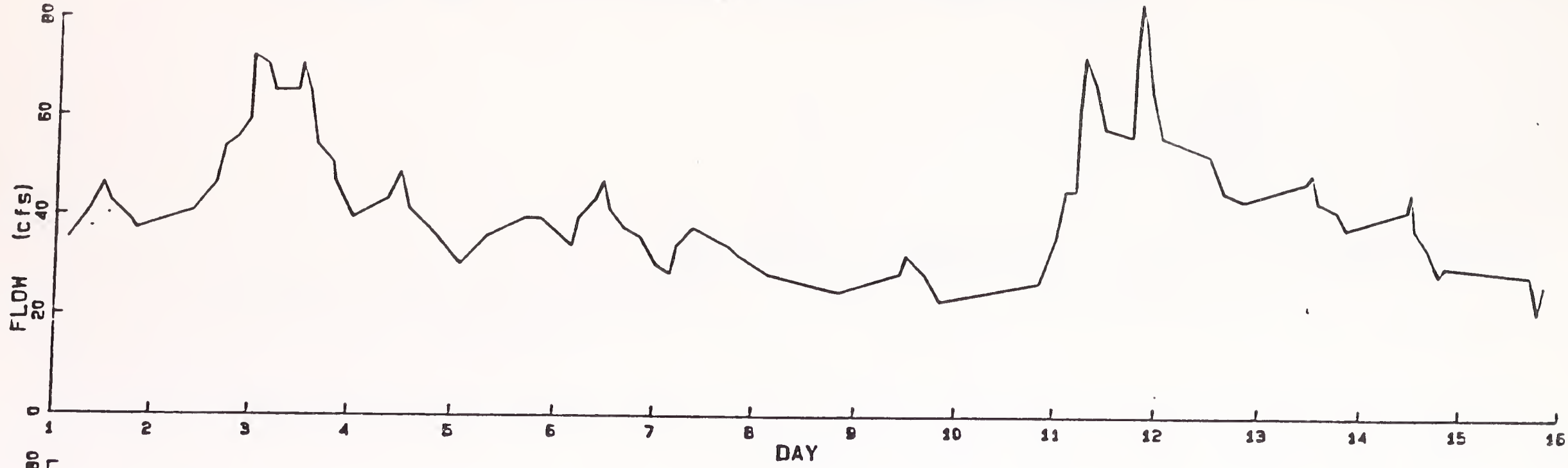
FLOW OF STATION SS19 FOR JUNE

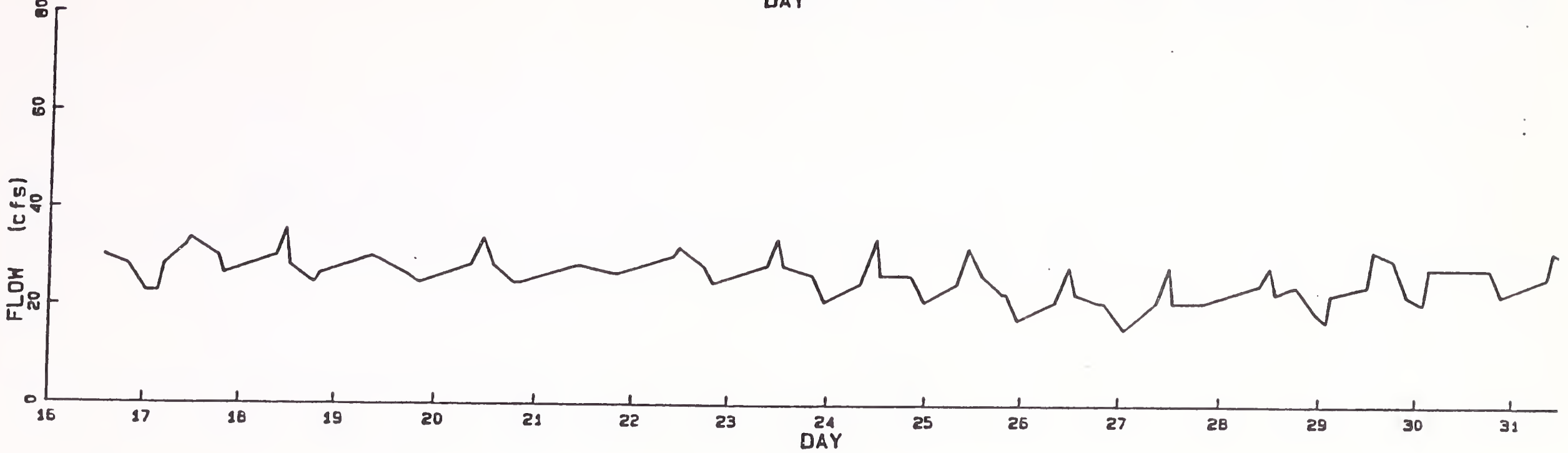


FLOW OF STATION SS19 FOR JULY

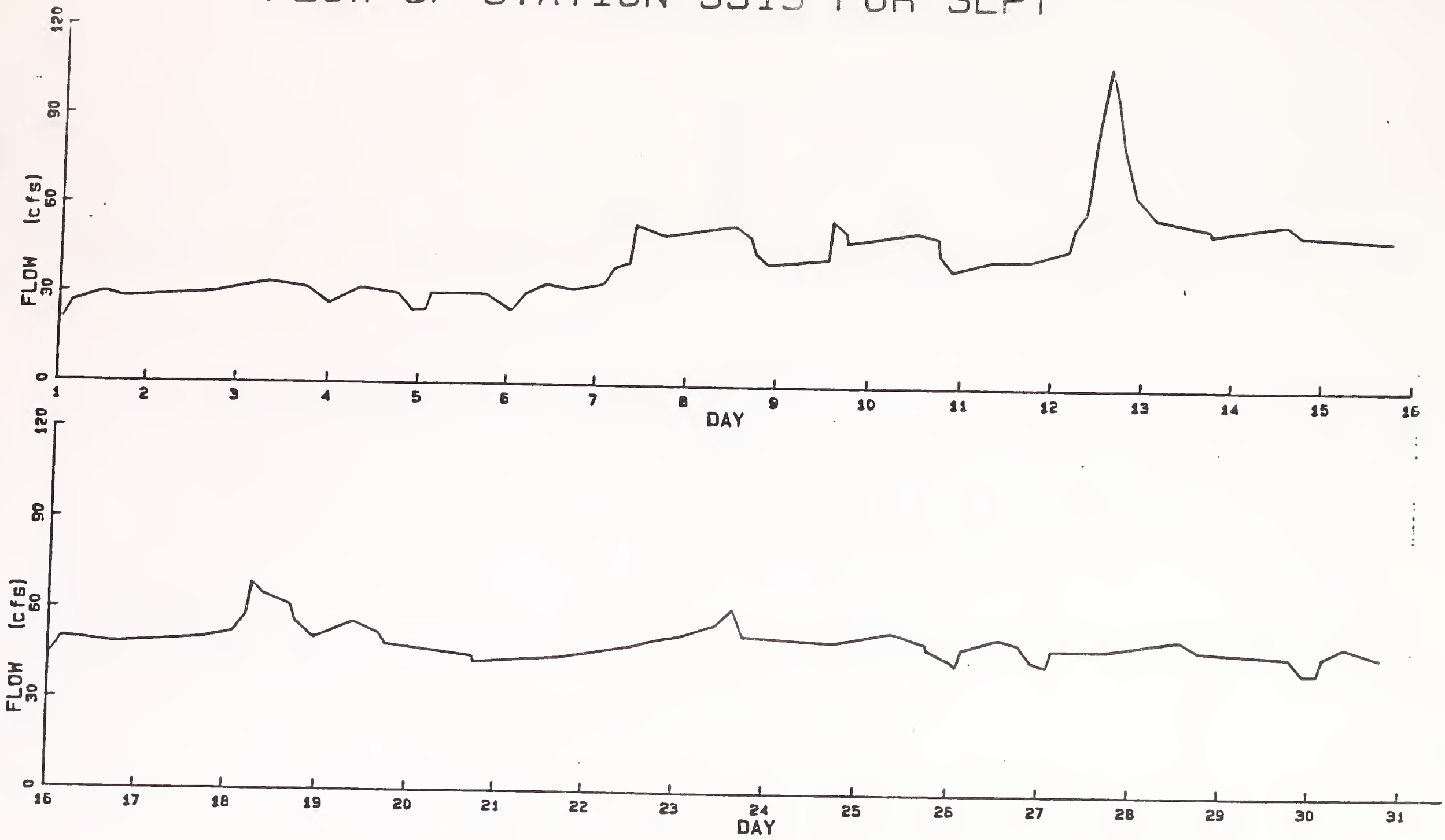


FLOW OF STATION SS19 FOR AUG





FLOW OF STATION SS19 FOR SEPT



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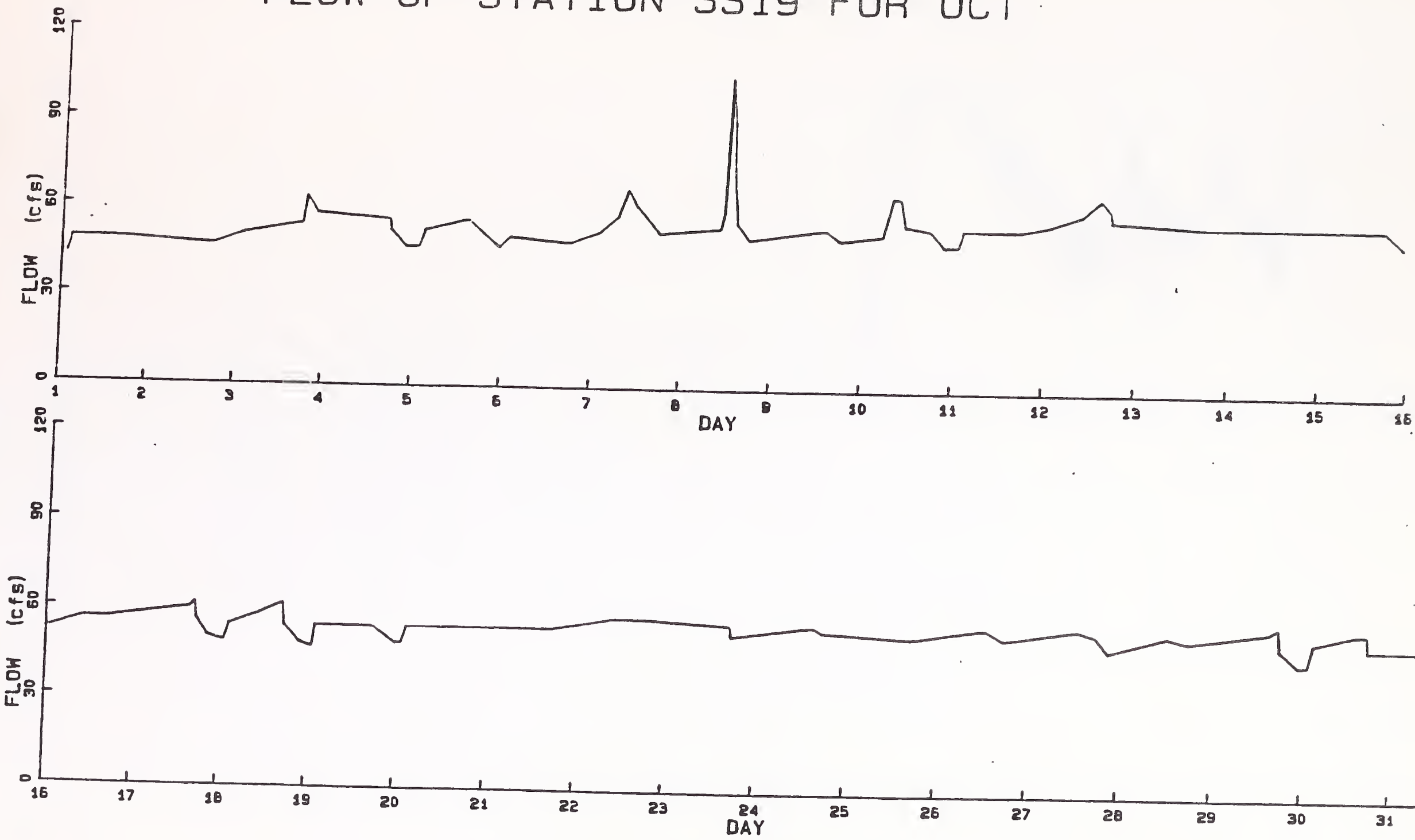
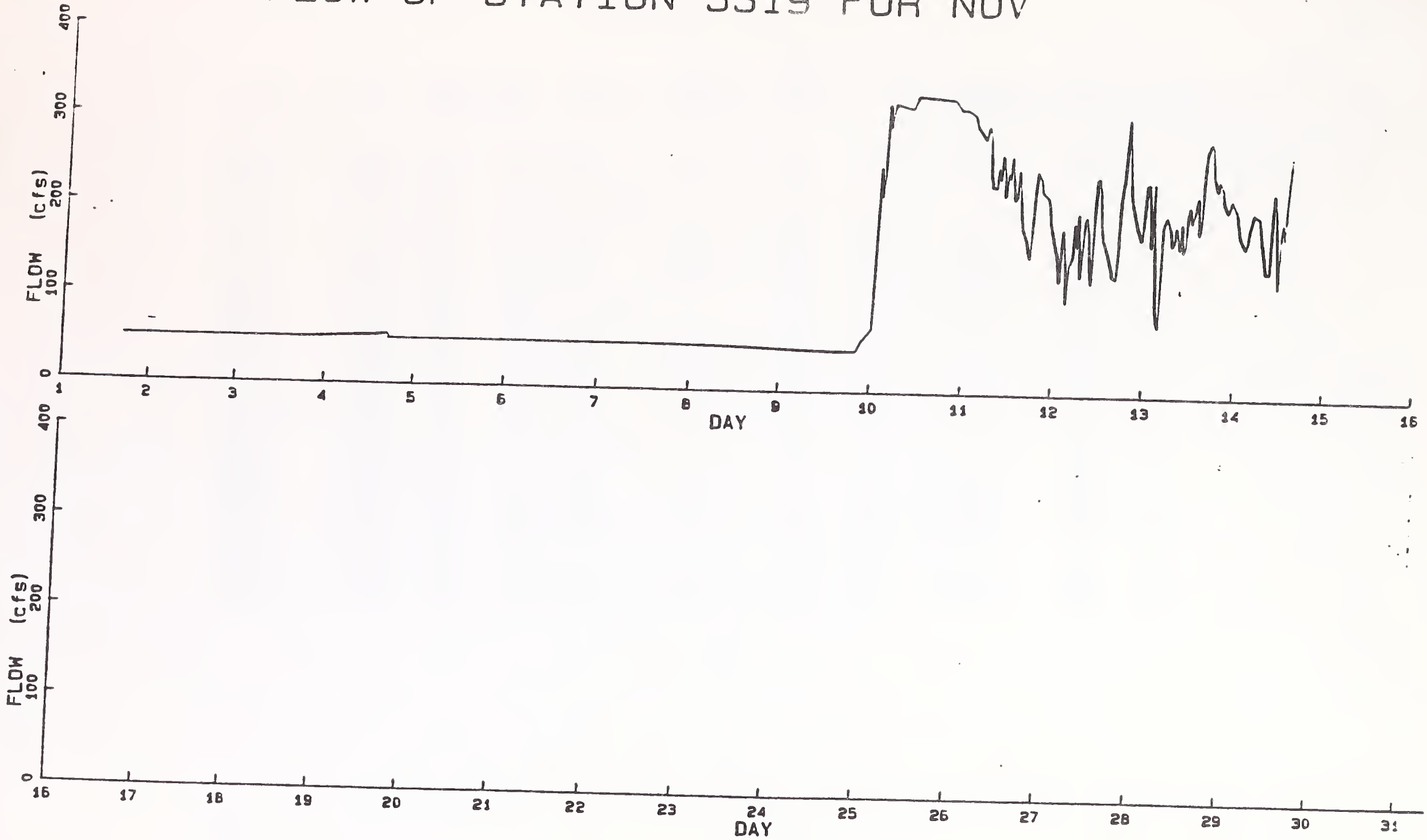


FLOW OF STATION SS19 FOR NOV



STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	Discharge and Rating (CFS)		PHYSICAL PARAMETERS Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS Ortho-Phosphate	PHOSPHORUS Total Phosphorus
PS-11A	12/05/84	1400	W 1280	EDI	8.2	P	4.0	7.8	522	* 284	<3	<0.25	<0.21
PS-12	12/05/84	1600	W 1289	EDI	116	P	2.0	7.2	641	* 640	7	<0.25	<0.21
SS-18	12/06/84	1000	W 1291	EDI	5.7	P	0.5	7.6	325	* 99	5		
SS-19	12/04/84	1545	W 1353										
SS-20	12/05/84	1230	W 1278	KEMMERER			2.0	9..	496	* 177	<3		
SS-21	12/05/84	1510	W 1286	EDI	23.7	G	4.5	8.3	696	* 303	<3		
SS-22	12/05/84	1215	W 1287	EDI	21.4	G	5.5	7.8	594	* 264	3		
SS-23	12/05/84	1530	W 1283	EWI	0.82	P	2.0	7.5	3050	* 2181	17		
SS-24	12/05/84	1600	W 1284	EWI	0.90	P	0.0	7.0	2800	* 2701	<3		
SS-25	12/05/84	1430	W 1285	EDI	16.7	F	7.0	7.8	702	* 450	<3		
SS-26	12/05/84	1530	W 1279	KEMMERER			1.0	8.0	550	* 284	<3		
SS-27	12/04/84	1500	W 1320										
SS-28	12/05/84	1045	W 1281	EDI	61.5	F	0.0	8.0	419	* 113	<3		
SS-29	12/05/84	1000	W 1288	EDI	145	F	0.5	7.4	332	* 280	<3		
PS-11A	12/28/84	1500	W 1345	EDI	8.16	F	2.0	8.0	548	* 402	<5	<0.019	* <0.041
PS-12	12/28/84	1300	W 1340	EDI	31.4	G	2.0	7.6	591	* 434	<5	<0.019	* 0.075
SS-18	12/28/84	0930	W 1335	EDI	26.5	G	1.0	6.9	338	* 270	<5		
SS-18 DUPE	12/28/84	1030	W 1336	EDI	26.7		*	7.0	339	* 267	<5		
SS-19	12/27/84	1545	W 1326										
SS-20	12/28/84	1250	W 1346	KEMMERER			2.0	9.2	511	* 375	10		
SS-21	12/28/84	1600	W 1342	EDI	15.1	G	2.5	7.7	574	* 395	<5		
SS-22	12/28/84	1530	W 1343	EDI	15.2	G	4.0	8.7	545	* 456	5		
SS-23	12/28/84	1500	W 1337	GRAB	1.63	F	2.0	6.9	1960	* 1900	31		
SS-24	12/28/84	1350	W 1338	GRAB	1.0	P	1.0	7.0	2360	* 2380	<5		
SS-25	12/28/84	1230	W 1339	EDI	37.2	G	1.0	7.2	453	* 358	<5		
SS-26	12/28/84	1615	W 1347	KEMMERER			0.0	6.8	551	* 405	30		
SS-27	12/27/84	1500	W 1327										
SS-28	12/28/84	1000	W 1348	EDI	78.7	G	1.0	7.5	362	* 283	<5		
SS-28 DUPE	12/28/84	1030	W 1349	EDI	78.7		1.0	7.5	362	* 277	<5		
SS-29	12/28/84	1100	W 1344	EDI	170	F	1.5	7.6	466	* 322	10		

01

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

STATION	SAMPLE DATE	SAMPLE TIME	COMMON IONS: Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	ORGHNICS: Oil and Grease	Cyanide	PCP	PCB
PS-11A	12/05/84	1400	142	0.97	118	118	0	* 252				
PS-12	12/05/84	1600	122	2.8	118	118	0	* 204				
SS-18	12/06/84	1000	70	0.99	107	107	0	* 166				
SS-19	12/04/84	1545										
SS-20	12/05/84	1230	105	2.0	125	125	0	* 208				
SS-21	12/05/84	1510	114	2.2	117	117	0	* 214				
SS-22	12/05/84	1215	126	2.9	115	115	0	* 214				
SS-23	12/05/84	1530	1260	1.4	114	114	0	* 1480				
SS-24	12/05/84	1600	1510	1.8	268	268	0	* 1870				
SS-25	12/05/84	1430	239	1.1	125	125	0	* 340				
SS-26	12/05/84	1530	136	1.7	124	124	0	* 222				
SS-27	12/04/84	1500										
SS-28	12/05/84	1045	100	0.66	124	124	0	* 218				
SS-29	12/05/84	1000	140	2.2	121	121	0	* 248				
PS-11A	12/28/84	1500	133	2.0	122	122	0	242				
PS-12	12/28/84	1300	148	2.5	129	129	0	264				
SS-18	12/28/84	0930	79	2.0	98	98	0	* 148				
SS-18 DUPE	12/28/84	1030	76	2.0	95	95	0	* 152				
SS-19	12/27/84	1545										
SS-20	12/28/84	1250	156	2.7	125	101	24	238				
SS-21	12/28/84	1600	128	9.8	127	127	0	233				
SS-22	12/28/84	1530	177	3.2	143	141	2	248				
SS-23	12/28/84	1500	1080	1.1	93	93	0	1230				
SS-24	12/28/84	1350	1310	1.6	228	228	0	1710				
SS-25	12/28/84	1230	138	2.1	105	105	0	236				
SS-26	12/28/84	1615	142	2.7	137	137	0	248				
SS-27	12/27/84	1500										
SS-28	12/28/84	1000	74	1.7	114	114	0	198				
SS-28 DUPE	12/28/84	1030	74	1.6	114	114	0	191				
SS-29	12/28/84	1100	131	2.5	115	115	0	226				

02

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	12/05/84	1400	0.009s	<0.00050	0.021	0.010	<0.0038	0.120	<0.049	0.015	0.015
PS-12	12/05/84	1600	0.004s	<0.00010	0.035	0.016	0.012	0.416	<0.049	0.118	0.100
SS-18	12/06/84	1000	0.012	<0.00010	0.021	<0.007	<0.0012	0.172	<0.049	0.015	0.015
SS-19	12/04/84	1545									
SS-20	12/05/84	1230	0.012	* <0.0012	0.063	0.021	0.0058	0.514	<0.049	0.316	0.231
SS-21	12/05/84	1510	0.0074	0.00080	0.054	0.025	0.014	0.521	<0.049	0.258	0.172
SS-22	12/05/84	1215	0.0095	0.00070	0.044	0.019	0.011	0.416	<0.049	0.206	0.148
SS-23	12/05/84	1530	0.0073	<0.00050	0.042	0.010	0.129	4.92	3.45	0.533	0.565
SS-24	12/05/84	1600	<0.0038	<0.00050	0.025	0.021	0.192	0.666	0.326	0.084	0.106
SS-25	12/05/84	1430	0.0090	<0.00050	0.023	0.0080	<0.0038	0.507	<0.049	0.077	0.088
SS-26	12/05/84	1530	0.010	* 0.0098	0.200	0.019	0.0086	0.649	<0.049	0.251	0.124
SS-27	12/04/84	1500									
SS-28	12/05/84	1045	<0.0038	<0.00050	<0.0070	<0.0070	<0.0038	0.088	<0.049	<0.0080	<0.0080
SS-29	12/05/84	1000	0.0081	<0.00050	0.040	0.010	0.017	0.313	<0.049	0.097	0.100
PS-11A	12/28/84	1500	0.0078	<0.00080	<0.031	<0.031	<0.0050	0.087	<0.058	0.042	0.035
PS-12	12/28/84	1300	0.0088	<0.00080	<0.031	<0.031	* <0.010	0.280	<0.058	0.154	0.133
SS-18	12/28/84	0930	0.015	0.0012	0.063	0.031	* <0.010	0.212	<0.058	0.377	0.345
SS-18' DUPE	12/28/84	1030	0.014	0.0014	0.067	<0.031	* 0.010	0.216	<0.058	0.360	0.338
SS-19	12/27/84	1545									
SS-20	12/28/84	1250	0.0091	0.00090	0.038	<0.031	<0.0050	0.144	<0.058	0.182	0.054
SS-21	12/28/84	1600	0.012	0.0014	0.063	<0.031	0.0050	0.553	<0.058	0.494	0.402
SS-22	12/28/84	1530	0.0094	0.0013	0.052	<0.031	<0.0050	0.323	<0.058	0.306	0.171
SS-23	12/28/84	1500	0.017	<0.00080	<0.031	:	* <0.010	17.4	14.0	0.632	0.638
SS-24	12/28/84	1350	<0.0085	<0.00080	<0.031	<0.031	* <0.010	0.338	0.137	0.035	0.047
SS-25	12/28/84	1230	0.013	0.0012	0.074	<0.031	* <0.010	0.545	<0.058	0.304	0.244
SS-26	12/28/84	1615	0.018	0.0043	0.222	<0.031	0.0081	2.55	<0.058	0.744	0.162
SS-27	12/27/84	1500									
SS-28	12/28/84	1000	<0.0065	<0.00080	0.048	<0.031	<0.0050	0.338	<0.058	0.017	<0.017
SS-28 DUPE	12/28/84	1030	0.0065	<0.00080	<0.031	<0.031	<0.0050	0.151	<0.058	0.017	0.017
SS-29	12/28/84	1100	0.0093	<0.00080	0.045	<0.031	0.045	0.431	<0.058	0.117	0.085

03

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Organic Carbon Dissolved
PS-11A	12/05/84	1400	--				
PS-12	12/05/84	1600	--				
SS-18	12/06/84	1000	--				
SS-19	12/04/84	1545	NO SAMPLE TAKEN.				
SS-20	12/05/84	1230	--				
SS-21	12/05/84	1510	--				
SS-22	12/05/84	1215	--				
SS-23	12/05/84	1530	--				
SS-24	12/05/84	1600	--				
SS-25	12/05/84	1430	--				
SS-26	12/05/84	1530	--				
SS-27	12/04/84	1500	NO SAMPLE COLLECTED.				
SS-28	12/05/84	1045	--				
SS-29	12/05/84	1000	--				
PS-11A	12/28/84	1500	--				
PS-12	12/28/84	1300	--				
SS-18	12/28/84	0930	--				
SS-18 DUPE	12/28/84	1030	--				
SS-19	12/27/84	1545	FROZEN-NO SAMPLE COLLTD				
SS-20	12/28/84	1250	POND #3				
SS-21	12/28/84	1600	--				
SS-22	12/28/84	1530	--				
SS-23	12/28/84	1500	--				
SS-24	12/28/84	1350	--				
SS-25	12/28/84	1230	--				
SS-26	12/28/84	1615	POND #2				
SS-27	12/27/84	1500	FROZEN-NO SAMPLE TAKEN				
SS-28	12/28/84	1000	--				
SS-28 DUPE	12/28/84	1030	--				
SS-29	12/28/84	1100	--				

04

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS Ortho-Phosphate	Total Phosphorus
PS-11A	01/30/85	1245	W 1456	EDI	4.3	F	2.0	6.9	585		* 5	<0.054	0.077
PS-12	01/30/85	1130	W 1453	EDI	52.7	F	0.5	7.6	606		* <5	<0.054	0.17
SS-18	01/30/85	1015	W 1459	EDI	14.2	P	1.0	7.2	309		* 6		
SS-19	01/29/85	1345	W 1429										
SS-20	01/30/85	1115	W 1455	KEMMERER			0.0	7.2	505		* <5		
SS-21	01/30/85	1500	W 1450	EDI	21.3	G	2.0	7.3	366		* 6		
SS-22	01/30/85	1340	W 1451	EDI	20.9	G	4.0	7.2	616		* 6		
SS-23	01/30/85	1600	W 1463	GRAB	1.5	F	0.5	6.5	1990		* 33		
SS-24	01/30/85	1430	W 1462	GRAB	1.0	P	0.5	6.8	2400		* <5		
SS-25	01/30/85	1215	W 1460	EDI	19.9	P	1.0	7.8	603		* <5		
SS-26	01/30/85	1000	W 1454	KEMMERER			0.0	7.5	551		* 73		
SS-27	01/29/85	1410	W 1430										
SS-28	01/30/85	1500	W 1457	EDI	81.7	P	1.0	7.2	390		* 9		
SS-29	01/30/85	1000	W 1452	EDI	114	F	0.0	7.8	590		* 5		
PS-11A	02/13/85	1330	W 1508	EDI	4.4	F	3.0	7.4	573		<5	0.034	0.12
PS-11A DUP	02/13/85	1445	W 1509	EDI	3.9	F	3.0	7.6	573		<5	0.036	0.10
PS-12	02/13/85	1345	W 1520	EDI	42.6	G	3.0	7.6	568		<5	0.032	0.18
SS-18	02/13/85	0930	W 1511	EWI	6.5	P	0.5	7.1	299		<5		
SS-19	02/12/85		W 1496										
SS-20	02/13/85	0900	W 1506	KEMMERER	POND 3		0.0	6.8	588		8		
SS-21	02/13/85	1500	W 1521	EDI	18.8	G	4.5	7.9	544		<5		
SS-22	02/13/85	1600	W 1522	EDI	17.2	G	4.0	7.5	594		<5		
SS-23	02/13/85	1400	W 1514	GRAB	1.0	F	2.0	7.0	1870		30		
SS-23 DUPE	02/13/85	1500	W 1515	GRAB	1.1	F	2.0	7.0	1880		36		
SS-24	02/13/85	1250	W 1513	GRAB	1.8	P	0.5	6.9	2340		9		
SS-25	02/13/85	1130	W 1512	EDI	14.9	F	2.0	7.6	650		6		
SS-26	02/13/85	1130	W 1507	KEMMERER	POND 3		1.0	7.3	551		14		
SS-27	02/12/85		W 1497										
SS-28	02/13/85		W 1510										
SS-29	02/13/85	1130	W 1518	EDI	155	F	0.0	8.0	428		<5		

05

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	01/30/85	1245	170	6.8	132	132	0	284				
PS-12	01/30/85	1130	154	3.9	116	116	0	252				
SS-18	01/30/85	1015	67	1.3	104	104	0	156				
SS-19	01/29/85	1345										
SS-20	01/30/85	1115	128	2.6	116	116	0	208				
SS-21	01/30/85	1500	* 115	3.0	109	109	0	216				
SS-22	01/30/85	1340	* 156	3.3	107	107	0	244				
SS-23	01/30/85	1600	1000	1.0	93	93	0	1150				
SS-24	01/30/85	1430	1320	2.1	254	254	0	1630				
SS-25	01/30/85	1215	252	1.2	129	129	0	344				
SS-26	01/30/85	1000	149	4.2	116	116	0	240				
SS-27	01/29/85	1410										
SS-28	01/30/85	1500	108	1.7	125	125	0	230				
SS-29	01/30/85	1000	134	2.3	130	130	0	260				
PS-11A	02/13/85	1330	175	1.8	150	150	0	176				
PS-11A DUP	02/13/85	1445	160	1.7	146	146	0	224				
PS-12	02/13/85	1345	155	6.6	116	116	0	217				
SS-18	02/13/85	0930	70	1.2	56	56	0	157				
SS-19	02/12/85											
SS-20	02/13/85	0900	175	4.5	110	110	0	182				
SS-21	02/13/85	1500	140	6.4	118	118	0	198				
SS-22	02/13/85	1600	145	6.3	122	122	0	242				
SS-23	02/13/85	1400	1080	0.87	91	91	0	1162				
SS-23 DUPE	02/13/85	1500	1080	0.83	91	91	0	1181				
SS-24	02/13/85	1250	1360	1.3	230	230	0	1130				
SS-25	02/13/85	1130	260	1.7	122	122	0	279				
SS-26	02/13/85	1130	150	2.3	120	120	0	224				
SS-27	02/12/85											
SS-28	02/13/85											
SS-29	02/13/85	1130	135	1.7	120	120	0	210				

06

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	01/30/85	1245	0.0062	<0.00040	<0.039	<0.025	0.0033	0.104	<0.019	0.088	0.102
PS-12	01/30/85	1130	0.0052	0.0014	0.047	<0.025	0.0042	0.565	0.053	0.431	0.376
SS-18	01/30/85	1015	0.0072	<0.00040	<0.039	<0.025	0.0038	0.188	<0.019	0.078	0.017
SS-19	01/29/85	1345									
SS-20	01/30/85	1115	0.014	0.0020	0.082	<0.025	0.010	0.744	<0.019	0.620	0.502
SS-21	01/30/85	1500	0.010	0.0021	0.061	0.024	0.0060	0.869	0.023	0.517	0.404
SS-22	01/30/85	1340	0.012	0.0018	0.056	<0.025	0.0068	0.743	<0.019	0.524	0.415
SS-23	01/30/85	1600	0.025	0.00030	0.051	<0.033	0.0030	24.2	21.4	0.614	0.642
SS-24	01/30/85	1430	<0.0096	0.00060	<0.039	<0.033	0.0050	0.910	0.820	0.328	0.059
SS-25	01/30/85	1215	0.012	0.00040	<0.039	<0.025	0.0030	0.519	0.051	0.092	0.076
SS-26	01/30/85	1000	0.026	0.012	0.419	<0.025	0.033	5.80	0.139	1.41	0.343
SS-27	01/29/85	1410									
SS-28	01/30/85	1500	0.0023	<0.00040	<0.039	<0.025	0.0040	0.114	<0.019	0.014	<0.015
SS-29	01/30/85	1000	0.0038	0.00080	<0.039	<0.025	0.0040	0.276	<0.019	0.196	0.118
PS-11A	02/13/85	1330	0.012	<0.0012	0.032	<0.017	<0.0026	0.179	<0.010	0.202	0.186
PS-11A DUP	02/13/85	1445	0.010	<0.0012	0.034	<0.026	<0.0026	0.183	<0.018	0.250	0.163
PS-12	02/13/85	1345	0.010	<0.0012	0.043	<0.026	<0.0057	0.562	<0.018	0.407	0.312
SS-18	02/13/85	0930	0.014	<0.0012	<0.026	<0.026	<0.0026	0.224	0.036	0.025	<0.018
SS-19	02/12/85										
SS-20	02/13/85	0900	0.011	0.0014	0.058	0.018	0.0041	0.765	0.026	0.460	0.398
SS-21	02/13/85	1500	0.013	0.0014	0.091	<0.026	<0.0057	0.832	<0.018	0.475	0.421
SS-22	02/13/85	1600	0.011	0.0012	0.063	0.027	<0.0057	0.621	<0.018	0.449	0.388
SS-23	02/13/85	1400	0.020	<0.0012	0.049	0.054	<0.0039	21.4	15.5	0.555	0.476
SS-23 DUPE	02/13/85	1500	0.024	<0.0012	0.049	0.027	<0.0039	23.8	15.6	0.607	0.497
SS-24	02/13/85	1250	0.019	<0.0012	0.080	<0.026	<0.0039	1.46	0.644	0.246	0.048
SS-25	02/13/85	1130	0.011	<0.0012	0.029	<0.026	0.0076	0.436	0.020	0.095	0.066
SS-26	02/13/85	1130	0.034	0.0044	0.258	<0.017	0.026	3.20	0.093	1.08	0.374
SS-27	02/12/85										
SS-28	02/13/85										
SS-29	02/13/85	1130	0.0074	<0.0012	0.031	<0.026	<0.0039	0.321	<0.018	0.145	0.120

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Organic Carbon Dissolved
PS-11A	01/30/85	1245	--				
PS-12	01/30/85	1130	--				
SS-18	01/30/85	1015	--				
SS-19	01/29/85	1345	NO SAMPLE TAKEN-FROZEN				
SS-20	01/30/85	1115	--				
SS-21	01/30/85	1500	--				
SS-22	01/30/85	1340	--				
SS-23	01/30/85	1600	--				
SS-24	01/30/85	1430	--				
SS-25	01/30/85	1215	--				
SS-26	01/30/85	1000	--				
SS-27	01/29/85	1410	NO SAMPLE TAKEN-FROZEN				
SS-28	01/30/85	1500	--				
SS-29	01/30/85	1000	--				
PS-11A	02/13/85	1330	--				
PS-11A DUP	02/13/85	1445	--				
PS-12	02/13/85	1345	--				
SS-18	02/13/85	0930	--				
SS-19	02/12/85		FROZEN-NO SAMPLE TAKEN				
SS-20	02/13/85	0900	--				
SS-21	02/13/85	1500	--				
SS-22	02/13/85	1600	--				
SS-23	02/13/85	1400	--				
SS-23 DUPE	02/13/85	1500	--				
SS-24	02/13/85	1250	--				
SS-25	02/13/85	1130	--				
SS-26	02/13/85	1130	--				
SS-27	02/12/85		--				
SS-28	02/13/85		FROZEN-NO SAMPLE TAKEN				
SS-29	02/13/85	1130	--				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS: Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS: Ortho-Phosphate	Total Phosphorus
PS-11A	02/27/85	0930	W 1554	EDI	4.1	F	5.5	7.7	613		4	0.025	0.12
PS-12	02/27/85	1045	W 1555	EDI	50.2	F	2.5	7.6	568		3	0.043	0.25
SS-18	02/27/85	0900	W 1559	EDI	10.7	G	1.0	7.4	362		4		
SS-19	02/26/85	1300	W 1544										
SS-20	02/27/85	1240	W 1557	KEMMERER	POND 3		4.0	7.7	539		8		
SS-21	02/27/85	1145	W 1565	EDI	20.5	F	1.5	7.9	644		5		
SS-22	02/27/85	1340	W 1566	EDI	20.4	F	4.0	7.7	482		5		
SS-23	02/26/85	1400	W 1543	EDI	1.3	F	4.0	7.0	1940		20		
SS-24	02/26/85	1500	W 1548	EDI	0.97	P	2.0	7.8	2290		<3		
SS-25	02/27/85	1030	W 1564	EDI	17.4	F	2.5	7.9	604		9		
SS-26	02/27/85	1130	W 1556	KEMMERER	POND 2		3.0	7.6	543		7		
SS-27	02/27/85	0815	W 1553	GRAB	0.67	P	1.0	7.5	1740		19		
SS-27A	02/27/85	1340	W 1558	GRAB	1.8	P	8.0	6.9	1990		85		
SS-28	02/27/85	1030	W 1560	EDI	46.6	G	1.5	8.1	513		8		
SS-29	02/27/85	1215	W 1561	EDI	126	G	1.5	8.2	561		8		
PS-11A	03/13/85	0915	W 1623	EDI	4.0	G	5.0	8.5	604		5	<0.10	<0.42
PS-12	03/13/85	1045	W 1624	EDI	54.4	G	2.0	8.3	522		4	0.10	<0.42
SS-18	03/13/85	0930	W 1619	EDI	13.4	G	1.0	7.6	375		4		
SS-19	03/12/85		W 1605										
SS-20	03/13/85	1200	W 1625	KEMMERER			3.0	7.9	512		6		
SS-21	03/13/85	1115	W 1616	EDI	22.6	G	7.0	8.1	492		4		
SS-22	03/13/85	1230	W 1617	EDI	22.4	F	5.5	7.9	497		5		
SS-23	03/12/85	1315	W 1604	EDI	1.6	F	6.5	7.0	2000		13		
SS-24	03/12/85	1400	W 1609	GRAB	1.3	P	3.5	7.5	2370		14		
SS-25	03/13/85	1015	W 1615	EDI	18.2	G	3.0	7.6	621		5		
SS-26	03/13/85	1330	W 1626	KEMMERER			5.0	8.0	518		8		
SS-27	03/13/85	1305	W 1618	GRAB	0.67	P	4.0	6.9	1480		17		
SS-28	03/13/85	1030	W 1620	EDI	46.4	G	2.0	8.0	539		5		
SS-29	03/13/85	1230	W 1621	EDI	122	G	3.0	8.0	583		5		

09

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	02/27/85	0930	142	2.5	147	147	0	284				
PS-12	02/27/85	1045	120	3.9	109	109	0	230				
SS-18	02/27/85	0900	80	2.4	106	106	0	164				
SS-19	02/26/85	1300										
SS-20	02/27/85	1240	121	3.7	106	106	0	222				
SS-21	02/27/85	1145	135	3.9	108	108	0	236				
SS-22	02/27/85	1340	159	4.1	116	116	0	228				
SS-23	02/26/85	1400	1240	1.6	92	92	0	1160				
SS-24	02/26/85	1500	1240	2.6	228	228	0	614				
SS-25	02/27/85	1030	259	2.4	126	126	0	331				
SS-26	02/27/85	1130	115	3.5	110	110	0	222				
SS-27	02/27/85	0815	694	2.2	192	192	0	988				
SS-27A	02/27/85	1340	1090	1.1	110	110	0	1080				
SS-28	02/27/85	1030	113	3.0	136	136	0	259				
SS-29	02/27/85	1215	138	3.0	126	126	0	266				
PS-11A	03/13/85	0915	135	2.6	137	137	0	273				
PS-12	03/13/85	1045	168	3.5	105	105	0	220				
SS-18	03/13/85	0930	58	2.1	104	104	0	145				
SS-19	03/12/85											
SS-20	03/13/85	1200	148	3.8	110	110	0	228				
SS-21	03/13/85	1115	115	3.9	103	103	0	203				
SS-22	03/13/85	1230	134	4.0	110	110	0	221				
SS-23	03/12/85	1315	1120	1.6	94	94	0	1140				
SS-24	03/12/85	1400	1160	2.9	220	220	0	1530				
SS-25	03/13/85	1015	175	2.5	123	123	0	301				
SS-26	03/13/85	1330	140	3.8	112	112	0	223				
SS-27	03/13/85	1305	767	2.8	188	188	0	842				
SS-28	03/13/85	1030	97	2.2	140	140	0	265				
SS-29	03/13/85	1230	128	2.9	122	122	0	253				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	02/27/85	0930	0.012	<0.0011	0.072	<0.027	<0.0025	0.145	<0.028	0.101	0.075
PS-12	02/27/85	1045	0.0096	<0.0011	0.106	<0.027	0.0057	0.573	<0.028	0.322	0.239
SS-18	02/27/85	0900	0.014	<0.0011	0.074	<0.027	<0.0025	0.181	0.042	0.013	0.017
SS-19	02/26/85	1300									
SS-20	02/27/85	1240	0.012	0.0016	0.152	<0.027	0.0086	1.17	<0.028	0.462	0.269
SS-21	02/27/85	1145	0.016	0.0013	0.065	<0.027	0.0053	0.687	<0.028	0.331	0.270
SS-22	02/27/85	1340	0.014	0.0013	0.065	<0.027	0.0045	0.676	<0.028	0.379	0.308
SS-23	02/26/85	1400	0.012	<0.0012	0.042	<0.027	0.0028	12.4	9.70	0.469	0.493
SS-24	02/26/85	1500	0.0096	<0.0012	0.027	<0.027	0.0038	0.507	0.143	0.052	0.044
SS-25	02/27/85	1030	0.012	<0.0011	0.036	<0.027	<0.0028	0.506	<0.028	0.072	0.048
SS-26	02/27/85	1130	0.012	0.0012	0.126	<0.027	0.0058	1.03	<0.028	0.396	0.266
SS-27	02/27/85	0815	<0.0096	<0.0011	0.055	<0.027	<0.0025	7.99	5.34	0.135	0.127
SS-27A	02/27/85	1340	0.097	<0.0011	0.190	0.054	<0.0025	54.2	37.5	0.547	0.454
SS-28	02/27/85	1030	0.0034	0.0011	0.059	<0.027	<0.0025	0.125	<0.028	<0.010	<0.010
SS-29	02/27/85	1215	0.0055	<0.0011	0.088	<0.027	0.0027	0.379	<0.028	0.129	0.088
PS-11A	03/13/85	0915	0.0081	<0.0028	0.065	<0.049	0.0072	0.116	<0.034	0.044	0.033
PS-12	03/13/85	1045	0.010	<0.0028	0.079	0.049	0.0078	0.517	<0.034	0.213	0.306
SS-18	03/13/85	0930	0.028	<0.0014	0.060	<0.049	<0.0068	0.242	0.049	0.020	<0.017
SS-19.	03/12/85										
SS-20	03/13/85	1200	0.013	<0.0028	0.135	<0.049	0.0092	1.04	<0.034	0.377	0.298
SS-21	03/13/85	1115	0.0092	<0.0014	0.096	<0.049	0.0068	0.643	<0.034	0.288	0.176
SS-22	03/13/85	1230	0.0077	0.0014	0.106	<0.049	<0.0068	0.631	0.036	0.341	0.403
SS-23	03/12/85	1315	0.0093	<0.0010	0.060	<0.049	0.0065	9.24	5.27	0.388	0.385
SS-24	03/12/85	1400	0.015	<0.0010	0.100	<0.049	0.0064	0.995	0.126	0.106	0.092
SS-25	03/13/85	1015	0.015	<0.0014	0.064	<0.049	<0.0068	0.421	<0.034	0.060	0.039
SS-26	03/13/85	1330	0.013	<0.0028	0.080	<0.049	0.0081	0.899	<0.034	0.230	0.134
SS-27	03/13/85	1305	<0.0066	<0.0014	<0.049	<0.049	0.0086	4.53	3.16	0.112	0.110
SS-28	03/13/85	1030	<0.0066	<0.0014	<0.049	<0.049	<0.0068	0.132	<0.034	<0.017	<0.017
SS-29	03/13/85	1230	0.0084	<0.0028	0.060	<0.049	0.0068	0.324	<0.034	0.079	0.059

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Organic Carbon Dissolved
PS-11A	02/27/85	0930	--				
PS-12	02/27/85	1045	--				
SS-18	02/27/85	0900	--				
SS-19	02/26/85	1300	NO SAMPLE TAKEN - FROZEN				
SS-20	02/27/85	1240	--				
SS-21	02/27/85	1145	--				
SS-22	02/27/85	1340	--				
SS-23	02/26/85	1400	--				
SS-24	02/26/85	1500	--				
SS-25	02/27/85	1030	--				
SS-26	02/27/85	1130	--				
SS-27	02/27/85	0815	--				
SS-27A	02/27/85	1340	--				
SS-28	02/27/85	1030	--				
SS-29	02/27/85	1215	--				
PS-11A	03/13/85	0915	--				
PS-12	03/13/85	1045	--				
SS-18	03/13/85	0930	--				
SS-19	03/12/85		FROZEN-NO SAMPLE TAKEN				
SS-20	03/13/85	1200	--				
SS-21	03/13/85	1115	--				
SS-22	03/13/85	1230	--				
SS-23	03/12/85	1315	--				
SS-24	03/12/85	1400	--				
SS-25	03/13/85	1015	--				
SS-26	03/13/85	1330	--				
SS-27	03/13/85	1305	--				
SS-28	03/13/85	1030	--				
SS-29	03/13/85	1230	--				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS Ortho-Phosphate	Total Phosphorus
PS-11A	03/27/85	1215	W 1659	EDI	3.19	F	3.0	7.5	640		<2	0.016	<0.020
PS-12	03/27/85	1415	W 1660	EDI	76.5	F	1.5	7.7	472		12	.088	0.020
SS-18	03/27/85	0915	W 1667	EDI	12.6	G	1.0	7.4	317		<2		
SS-19	03/26/85	1430	W 1652	EDI	69.0	F	6.0	8.0	354		16	0.34	0.52
SS-20	03/27/85	1015	W 1658	KEMMERER			3.5	7.8	563		4		
SS-21	03/27/85	1130	W 1664	EDI	34.0	G	3.0	7.8	379		<2		
SS-22	03/27/85	1300	W 1665	EDI	33.8	G	4.0	8.1	420		3		
SS-23	03/26/85	1545	W 1653	EDI	2.3	G	6.0	7.6	1900		8		
SS-24	03/26/85	1440	W 1645	EDI	1.1	P	7.0	7.8	2450		<2		
SS-25	03/27/85	1000	W 1663	EDI	18.7	G	2.0	7.8	588		<2		
SS-26	03/27/85	0910	W 1657	KEMMERER			0.5	7.8	596		4		
SS-27	03/27/85	1450	W 1666	GRAB	1.3	P	2.0	6.5	1400		5		
SS-27A	03/27/85	1520	W 1661	GRAB	1.3	P	9.0	6.7	2020		56		
SS-28	03/27/85	1015	W 1668	EDI	45.5	G	2.0	8.1	463		<2		
SS-29	03/27/85	1150	W 1669	EDI	144	G	2.0	7.6	525		2		
PS-11A	04/10/85	0945	W 1734	EDI	3.3	F	7.0	7.4	554		<2	0.062	* <0.048
PS-12	04/10/85	1115	W 1735	EDI	114	G	10.0	7.7	401		7	0.10	* 0.19
SS-18	04/10/85	0850	W 1724	EDI	24.0	G	5.0	7.6	283		8		
SS-19	04/09/85	1440	W 1718	EDI	105	G	10.5	7.3	323		40	0.52	* 1.1
SS-20	04/10/85	1320	W 1737	GRAB	POND 3		6.0	7.8	287		2		
SS-21	04/10/85	1130	W 1731	EDI	42.8	F	7.0	7.6	376		5		
SS-22	04/10/85	1245	W 1732	EDI	60.6	F	6.0	8.1	384		4		
SS-23	04/09/85	1520	W 1723	EDI	1.87	F	13.0	7.4	2020		<2		
SS-24	04/09/85	1400	W 1715	EDI	1.27	F	15.0	7.4	2420		<2		
SS-25	04/10/85	1000	W 1730	EDI	31.4	F	8.0	7.6	443		4		
SS-26	04/10/85	1230	W 1736	GRAB			11.0	7.7	467		5		
SS-27	04/10/85	1245	W 1728	GRAB	1.1	P	11.0	7.6	1130		2		
SS-27A	04/10/85	0840	W 1733	GRAB	1.7	P	10.0	6.6	2040		47		
SS-28	04/10/85	1005	W 1725	EDI	53.2	F	7.0	8.1	462		8		
SS-29	04/10/85	1130	W 1726	EDI	196	G	9.0	8.2	449		4		
SS-21	04/16/85	1415	W1747	EDI	61.8	G	10.0	8.7	358		12		
SS-22	04/16/85	1230	W1746	EDI	74.8	G	9.5	8.5	360		10		

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	03/27/85	1215	135	1.5	139	139	0	284				
PS-12	03/27/85	1415	118	2.4	96	96	0	202				
SS-18	03/27/85	0915	72	2.3	101	101	0	157				
SS-19	03/26/85	1430	78	5.0	98	98	0	147				
SS-20	03/27/85	1015	190	2.4	96	96	0	254				
SS-21	03/27/85	1130	122	3.0	98	98	0	191				
SS-22	03/27/85	1300	111	2.9	109	109	0	197				
SS-23	03/26/85	1545	1080	2.9	119	119	0	1230				
SS-24	03/26/85	1440	1450	4.1	226	226	0	1640				
SS-25	03/27/85	1000	192	1.6	120	120	0	300				
SS-26	03/27/85	0910	192	2.3	105	105	0	268				
SS-27	03/27/85	1450	665	1.9	160	160	0	757				
SS-27A	03/27/85	1520	1130	1.0	111	111	0	1020				
SS-28	03/27/85	1015	121	2.7	141	141	0	247				
SS-29	03/27/85	1150	130	3.0	169	169	0	232				
PS-11A	04/10/85	0945	142	4.0	128	128	0	252				
PS-12	04/10/85	1115	102	3.6	76	76	0	172				
SS-18	04/10/85	0850	43	2.8	83	83	0	124				
SS-19	04/09/85	1440	64	4.1	85	85	0	126				
SS-20	04/10/85	1320	53.5	3.7	68	68	0	112				
SS-21	04/10/85	1130	98	4.2	84	84	0	166				
SS-22	04/10/85	1245	114	4.1	76	76	0	194				
SS-23	04/09/85	1520	1120	3.6	115	115	0	1350				
SS-24	04/09/85	1400	1430	5.0	227	227	0	1730				
SS-25	04/10/85	1000	126	3.7	96	96	0	226				
SS-26	04/10/85	1230	122	3.6	80	80	0	180				
SS-27	04/10/85	1245	425	3.0	95	95	0	548				
SS-27A	04/10/85	0840	1010	3.2	116	116	0	1180				
SS-28	04/10/85	1005	108	3.8	133	133	0	252				
SS-29	04/10/85	1130	100	3.5	94	94	0	204				
SS-21	04/16/85	1415	105	3.6	78	70	8	168				
SS-22	04/16/85	1230	106	3.1	78	70	8	172				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	03/27/85	1215	0.011	<0.0015	<0.049	<0.049	<0.0030	0.057	<0.034	<0.017	<0.017
PS-12	03/27/85	1415	0.016	<0.0015	0.105	<0.049	<0.0030	1.43	0.215	0.265	0.131
SS-18	03/27/85	0915	0.021	<0.0013	0.092	<0.049	<0.0030	0.250	0.038	0.018	<0.017
SS-19	03/26/85	1430	<0.0096	0.0019	0.194	0.051	0.017	1.08	0.089	0.421	0.321
SS-20	03/27/85	1015	0.014	0.0016	0.103	<0.049	0.015	0.688	<0.034	0.298	0.218
SS-21	03/27/85	1130	* 0.014	* <0.0015	* 0.089	<0.049	* 0.0038	* 0.724	0.055	* 0.280	0.195
SS-22	03/27/85	1300	0.016	<0.0015	0.097	<0.049	<0.0030	1.04	0.048	0.285	0.155
SS-23	03/26/85	1545	<0.0096	<0.0019	<0.049	<0.049	<0.0040	2.04	0.903	0.257	0.272
SS-24	03/26/85	1440	<0.0096	<0.0019	<0.049	<0.049	<0.0040	0.486(1)	3.00	0.043(1)	0.146
SS-25	03/27/85	1000	0.019	<0.0015	<0.049	<0.049	<0.0030	0.560	<0.034	0.062	0.046
SS-26	03/27/85	0910	<0.0078	0.0017	0.083	<0.049	0.014	1.08	<0.034	0.163	0.022
SS-27	03/27/85	1450	<0.0078	<0.0015	<0.049	<0.049	<0.0030	2.64	0.701	0.051	0.045
SS-27A	03/27/85	1520	0.091	<0.0015	0.097	0.068	<0.0030	40.2	35.8	0.432	0.453
SS-28	03/27/85	1015	<0.0030	<0.0013	0.052	<0.049	0.0032	0.167	<0.034	<0.017	<0.017
SS-29	03/27/85	1150	0.011	0.0014	0.122	<0.049	0.0060	0.699	<0.034	0.133	0.044
PS-11A	04/10/85	0945	0.0159	<0.0011	0.043	<0.075	<0.0070	0.056	<0.029	0.011	<0.014
PS-12	04/10/85	1115	0.018	<0.0011	0.139	<0.075	0.017	1.18	0.036	0.258	0.072
SS-18	04/10/85	0850	0.031	<0.0015	0.043	<0.075	0.0076	0.380	<0.029	0.017	<0.014
SS-19	04/09/85	1440	0.027	<0.0022	0.262	<0.075	0.0060	2.28	0.107	0.491	0.259
SS-20	04/10/85	1320	0.019	0.0011	0.099	<0.075	0.014	1.00	0.032	0.295	0.097
SS-21	04/10/85	1130	0.022	0.0011	0.147	<0.075	0.018	1.30	<0.029	0.353	0.154
SS-22	04/10/85	1245	0.025	0.0017	0.183	<0.075	0.020	1.84	0.061	0.458	0.164
SS-23	04/09/85	1520	0.0081	<0.0015	0.065	<0.075	<0.0068	1.00	0.067	0.179	0.173
SS-24	04/09/85	1400	0.010	<0.0018	0.067	<0.075	<0.0050	0.471	<0.029	0.048	0.050
SS-25	04/10/85	1000	0.024	<0.0011	0.100	<0.075	0.0070	0.603	0.043	0.071	0.038
SS-26	04/10/85	1230	0.014	<0.0011	0.129	<0.075	0.014	1.21	<0.029	0.237	0.049
SS-27	04/10/85	1245	0.0072	<0.0015	0.030	<0.075	<0.0068	1.12	<0.029	0.040	0.014
SS-27A	04/10/85	0840	0.128	<0.0011	0.108	0.075	<0.0070	42.9	34.8	0.542	0.567
SS-28	04/10/85	1005	0.018	<0.0015	0.073	<0.075	0.0082	0.361	<0.029	0.014	<0.014
SS-29	04/10/85	1130	0.018	<0.0015	0.107	<0.075	0.012	0.868	<0.029	0.138	0.040
SS-21	04/16/85	1415	0.016	<0.0019	<0.0019	0.045	0.0086	0.172	0.019	0.811	0.021
SS-22	04/16/85	1230	0.014	<0.0019	0.077	<0.036	0.012	0.710	0.021	0.184	0.035

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Dissolved
PS-11A	03/27/85	1215	--				
PS-12	03/27/85	1415	--			67	17
SS-18	03/27/85	0915	--				
SS-19	03/26/85	1430	--				
SS-20	03/27/85	1015	POND 3				
SS-21	03/27/85	1130	--			18	25
SS-22	03/27/85	1300	--			63	36
SS-23	03/26/85	1545	--				
SS-24	03/26/85	1440	--				
SS-25	03/27/85	1000	--				
SS-26	03/27/85	0910	POND 2				
SS-27	03/27/85	1450	--				
SS-27A	03/27/85	1520	--				
SS-28	03/27/85	1015	--				
SS-29	03/27/85	1150	--				
PS-11A	04/10/85	0945	--				
PS-12	04/10/85	1115	--				
SS-18	04/10/85	0850	--				
SS-19	04/09/85	1440	--				
SS-20	04/10/85	1320	POND 3				
SS-21	04/10/85	1130	--				
SS-22	04/10/85	1245	--				
SS-23	04/09/85	1520	--				
SS-24	04/09/85	1400	--				
SS-25	04/10/85	1000	--				
SS-26	04/10/85	1230	POND 2				
SS-27	04/10/85	1245	--				
SS-27A	04/10/85	0840	--				
SS-28	04/10/85	1005	--				
SS-29	04/10/85	1130	--				
SS-21	04/16/85	1415				9.0	12.0
SS-22	04/16/85	1230				9.0	12

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS: Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS: Ortho-Phosphate	Total Phosphorus
PS-11A	04/24/85	1300	W 1825	EDI	5.54	F	5.0	7.6	480		<4	0.090	* <0.042
PS-12	04/24/85	0930	W 1830	EDI	68.1	F	3.5	8.3	409		17	0.050	* 0.10
SS-18	04/24/85	0845	W 1822	EDI	32.9	G	2.0	7.1	181		<4		
SS-19	04/23/85	1325	W 1801	EDI	92.7	F	6.0	7.9	295		15	0.58	* 0.85
SS-20	04/24/85	1245	W 1832	KEMMERER			4.0	8.0	382		29		
SS-21	04/24/85	1430	W 1826	EDI	27.8	G	3.0	8.4	385		36		
SS-22	04/24/85	1530	W 1827	EDI	41.2	G	5.0	9.0	375		18		
SS-23	04/23/85	1450	W 1803	EDI	1.93	P	7.0	7.8	2210		18		
SS-24	04/23/85	1325	W 1796	EDI	0.920	F	7.0	7.8	2430		17		
SS-25	04/24/85	1115	W 1831	EDI	38.7	F	4.5	8.2	377		4		
SS-26	04/24/85	1430	W 1833	KEMMERER			7.0	8.6	427		36		
SS-27	04/23/85	1435	W 1798	GRAB	2.2	P	5.0	7.8	1520		16		
SS-27A	04/23/85	1410	W 1797	GRAB	EST. 1	P	6.0	6.8	2040		73		
SS-28	04/24/85	1000	W 1823	EDI	61.1	G	3.0	8.0	390		6		
SS-29	04/24/85	1115	W 1824	EDI	174	G	3.0	8.0	368		11		
PS-11A	05/08/85	1245	W 1902	EDI	6.11	F	11.0	7.4	518		<4	0.030	* 0.020
PS-12	05/08/85	1330	W 1906	EDI	93.7	G	14.0	8.0	415		9	<0.020	* 0.080
SS-18	05/08/85	0845	W 1899	EDI	87.3	F	7.0	7.4	146		10		
SS-19	05/07/85	1540	W 1883	EDI	96.0	G	14.0	8.1	265		13	0.24	* 0.30
SS-20	05/08/85	1015	W 1905	KEMMERER			12.5	8.9	372		11	<0.020	* 0.070
SS-21	05/08/85	1350	W 1903	EDI	34.3	G	13.0	8.8	402		13	<0.020	* 0.070
SS-22	05/08/85	1500	W 1904	EDI	43.7	G	12.5	8.9	371		6	<0.020	* 0.070
SS-23	05/07/85	1430	W 1882	GRAB	1.49	F	15.0	7.7	2240		11		
SS-24	05/07/85	1555	W 1889	EDI	0.840	F	14.0	7.7	2520		10		
SS-25	05/08/85	1455	W 1907	EDI	91.4	G	11.0	7.1	271		7		
SS-26	05/08/85	1530	W 1908	KEMMERER			13.5	8.0	416		45	<0.020	* 0.22
SS-27	05/07/85	1545	W 1898										
SS-27A	05/07/85	1630	W 1897		1.0	P	17.0	6.6	2010				
SS-28	05/08/85	1000	W 1900	EDI	133	F	8.0	7.3	257		23		
SS-29	05/08/85	1110	W 1901	EDI	314	F	9.5	7.6	295		18		

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	04/24/85	1300	137	4.1	* 122	* 122	0	213				
PS-12	04/24/85	0930	122	4.0	* 79	* 79	0	167				
SS-18	04/24/85	0845	33	2.7	* 57	* 57	0	88				
SS-19	04/23/85	1325	59	4.6	* 80	* 80	0	121				
SS-20	04/24/85	1245	105	4.8	* 82	* 82	0	154				
SS-21	04/24/85	1430	116	4.4	* 84	* 84	0	165				
SS-22	04/24/85	1530	114	4.2	* 81	* 81	0	154				
SS-23	04/23/85	1450	1240	4.3	* 130	* 130	0	1370				
SS-24	04/23/85	1325	1370	4.8	* 224	* 224	0	1560				
SS-25	04/24/85	1115	119	3.7	* 77	* 77	0	158				
SS-26	04/24/85	1430	129	4.3	* 82	* 82	0	178				
SS-27	04/23/85	1435	820	4.2	* 113	* 113	0	499				
SS-27A	04/23/85	1410	1160	2.1	* 101	* 101	0	1090				
SS-28	04/24/85	1000	97	3.9	* 126	* 122	* 4	217				
SS-29	04/24/85	1115	113	3.6	* 97	* 97	0	188				
PS-11A	05/08/85	1245	118	0.53	117	117	0	211				
PS-12	05/08/85	1330	106	<0.50	80	80	0	169				
SS-18	05/08/85	0845	17	<0.50	37	37	0	87				
SS-19	05/07/85	1540	49	1.2	80	80	0	107				
SS-20	05/08/85	1015	96	<0.50	79	79	0	153				
SS-21	05/08/85	1350	98	<0.50	82	82	0	156				
SS-22	05/08/85	1500	96	<0.50	81	81	0	155				
SS-23	05/07/85	1430	1390	0.80	130	130	0	1460				
SS-24	05/07/85	1555	1440	0.60	213	213	0	1610				
SS-25	05/08/85	1455	46	<0.50	49	49	0	88				
SS-26	05/08/85	1530	114	<0.50	84	84	0	172				
SS-27	05/07/85	1545										
SS-27A	05/07/85	1630										
SS-28	05/08/85	1000	50	0.54	86	86	0	134				
SS-29	05/08/85	1110	68	<0.50	75	75	0	130				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	04/24/85	1300	0.014	<0.00050	<0.013	<0.014	<0.0020	0.072	0.021	0.011	0.0090
PS-12	04/24/85	0930	0.010	<0.00050	0.084	<0.018	<0.0028	1.02	0.0040	0.190	0.021
SS-18	04/24/85	0845	0.024	<0.00050	<0.013	<0.014	0.0022	0.212	0.052	0.014	<0.0090
SS-19	04/23/85	1325	0.022	0.0015	0.144	0.035	0.016	1.17	0.091	0.343	0.227
SS-20	04/24/85	1245	0.019	0.0027	0.202	0.025	0.011	2.06	0.047	0.460	0.066
SS-21	04/24/85	1430	0.026	0.0029	0.218	<0.014	0.014	2.14	0.084	0.492	0.046
SS-22	04/24/85	1530	0.014	0.00080	0.094	<0.014	<0.0020	0.854	<0.015	0.195	0.0090
SS-23	04/23/85	1450	0.011	<0.00050	<0.019	<0.019	0.0030	1.71	<0.0090	0.116	0.106
SS-24	04/23/85	1325	<0.0042	<0.00030	<0.019	<0.019	<0.0020	0.443	0.015	0.038	0.047
SS-25	04/24/85	1115	0.024	<0.00050	0.044	<0.018	<0.0020	0.500	0.052	0.047	0.027
SS-26	04/24/85	1430	0.014	0.0017	0.165	0.018	0.013	2.15	0.019	0.399	0.050
SS-27	04/23/85	1435	0.012	<0.00050	0.021	<0.019	<0.0016	0.047	0.033	0.050	<0.018
SS-27A	04/23/85	1410	0.108	<0.00030	0.065	0.048	<0.0020	35.0	31.5	0.468	0.523
SS-28	04/24/85	1000	0.0055	<0.00050	0.027	<0.014	<0.0020	0.286	0.035	0.0070	0.010
SS-29	04/24/85	1115	0.013	<0.00050	0.050	<0.014	<0.0020	0.658	0.031	0.086	0.016
PS-11A	05/08/85	1245	0.013	<0.00030	0.022	0.018	0.00080	0.055	<0.064	0.015	<0.017
PS-12	05/08/85	1330	0.011	<0.00010	0.035	<0.011	0.00080	0.344	<0.011	0.065	<0.015
SS-18	05/08/85	0845	0.024	<0.00030	0.018	<0.014	<0.00080	0.470	<0.064	0.026	<0.017
SS-19	05/07/85	1540	0.018	0.00080	0.094	0.023	0.011	0.652	0.039	0.240	0.072
SS-20	05/08/85	1015	0.014	0.00060	0.085	<0.011	0.0019	0.985	<0.011	0.229	0.016
SS-21	05/08/85	1350	0.011	0.00070	0.061	0.018	0.00080	0.594	<0.064	0.121	<0.017
SS-22	05/08/85	1500	0.011	0.0013	0.038	<0.011	0.0010	0.446	<0.011	0.108	<0.015
SS-23	05/07/85	1430	0.0066	<0.00030	0.024	<0.017	<0.0021	0.846	<0.0060	0.094	0.061
SS-24	05/07/85	1555	0.0022	<0.00030	0.019	<0.017	<0.0021	0.390	0.012	0.038	0.030
SS-25	05/08/85	1455	0.023	<0.00010	0.032	0.020	0.00060	0.410	0.090	0.026	0.018
SS-26	05/08/85	1530	0.023	0.0010	0.265	<0.011	0.022	3.71	<0.011	0.729	0.021
SS-27	05/07/85	1545									
SS-27A	05/07/85	1630									
SS-28	05/08/85	1000	0.0069	<0.00030	0.053	0.020	0.00090	0.578	<0.064	0.016	<0.017
SS-29	05/08/85	1110	0.015	<0.00030	0.059	<0.014	<0.00080	0.794	<0.064	0.046	<0.017

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Dissolved
PS-11A	04/24/85	1300	--				
PS-12	04/24/85	0930	--			26	8.0
SS-18	04/24/85	0845	--				
SS-19	04/23/85	1325	--				
SS-20	04/24/85	1245	WARM SPRINGS POND #3				
SS-21	04/24/85	1430	--				
SS-22	04/24/85	1530	--				
SS-23	04/23/85	1450	--				
SS-24	04/23/85	1325	--				
SS-25	04/24/85	1115	--				
SS-26	04/24/85	1430	WARM SPRINGS POND #2				
SS-27	04/23/85	1435	--				
SS-27A	04/23/85	1410	--				
SS-28	04/24/85	1000	--				
SS-29	04/24/85	1115	--				
PS-11A	05/08/85	1245					
PS-12	05/08/85	1330					
SS-18	05/08/85	0845					
SS-19	05/07/85	1540					
SS-20	05/08/85	1015	WARM SPRINGS POND 3				
SS-21	05/08/85	1350				25	6.0
SS-22	05/08/85	1500				24	21
SS-23	05/07/85	1430					
SS-24	05/07/85	1555					
SS-25	05/08/85	1455					
SS-26	05/08/85	1530	WARM SPRINGS POND 2				
SS-27	05/07/85	1545	NO SAMPLE TAKEN-NO DISCHARGE				
SS-27A	05/07/85	1630					
SS-28	05/08/85	1000					
SS-29	05/08/85	1110					

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS Ortho-Phosphate	Total Phosphorus
PS-11A	05/22/85	1120	W2137	GRAB	6.20	P	13.5	8.0	463		* <7	0.029	0.090
PS-12	05/22/85	1245	W2133	EDI	36.1	F	18.0	8.3	422		* <7	0.036	0.12
SS-18	05/22/85	0900	W2130	EDI	68.7	G	7.0	7.0	102		* <7		
SS-19	05/21/85	1530	W2124	EDI	79.4	F	18.0	8.8	311		* 18	0.38	0.62
SS-20	05/22/85	0840	W2135	KEMMERER			15.5	8.3	390		* <7		
SS-21	05/22/85	1420	W2139	EDI	21.6	G	17.0	8.1	387		* <7	0.17	0.13
SS-22	05/22/85	1315	W2138	EDI	39.3	F	16.5	8.2	398		* <7	0.072	0.16
SS-23	05/21/85	1325	W2113	EDI	1.30	F	19.0	7.6	2250		* 8		
SS-24	05/21/85	1355	W2114	EDI	0.86	F	19.5	7.5	2390		* 7		
SS-25	05/22/85	1130	W2132	EDI	73.5	F	10.0	7.4	203		* 9		
SS-26	05/22/85	0945	W2136	KEMMERER			15.5	8.4	438		* <7		
SS-27	05/21/85	1425	W2115	GRAB	1.75	P	22.0	7.4	1650		* 7		
SS-27A	05/21/85	1425	W2117	NA	1.5	P	23.0	6.3	1880				
SS-28	05/22/85	1000	W2131	EDI	168	F	8.0	7.7	226		* 40		
SS-29	05/22/85	1450	W2134	EDI	263	F	13.0	7.6	270		14		
PS-11A	06/05/85	1430	W2425	EDI	6.54	P	15.0	8.3	446		<3	0.030	* 0.080
PS-12	06/05/85	1030	W2417	EDI	134	F	16.0	8.8	385		<3	0.030	* 0.13
SS-18	06/05/85	0915	W2421	EDI	63.6	F	10.0	7.4	227		4		
SS-19	06/04/85	1445	W2405	EDI	112	G	12.0	7.1	333		16	0.16	* 0.57
SS-20	06/05/85	0915	W2416	KEMMERER			13.0	8.7	382		<3		
SS-21	06/05/85	1250	W2419	EDI	56.6	G	16.0	8.6	398		7	0.050	* 0.18
SS-22	06/05/85	1315	W2424	EDI	72.0	F	15.0	8.5	380		4	0.050	* 0.17
SS-23	06/04/85	1625	W2415	EDI	2.12	F	15.0	7.7	2240		14		
SS-24	06/04/85	1445	W2411	EDI	1.15	F	14.0	7.3	2460		13		
SS-25	06/05/85	1130	W2418	EDI	68.0	G	12.0	8.0	295		6		
SS-26	06/05/85	1345	W2420	KEMMERER			17.0	8.5	416		12		
SS-27	06/04/85	1530	W2413	GRAB	0.40	P	17.0	7.6	1430		11		
SS-27A	06/04/85	1500	W2412	GRAB	EST.1.0	P	16.0	6.6	2160		54		
SS-28	06/05/85	1030	W2422	EDI	72.3	F	9.0	7.2	300		3		
SS-29	06/05/85	1145	W2423	EDI	259	G	13.0	7.7	393		4		

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	05/22/85	1120	118	0.66	103	103	0	173				
PS-12	05/22/85	1245	108	0.86	78	78	0	149				
SS-18	05/22/85	0900	13	0.41	33	33	0	51				
SS-19	05/21/85	1530	56	1.7	81	81	0	130				
SS-20	05/22/85	0840	93	0.80	83	83	0	84				
SS-21	05/22/85	1420	100	0.83	86	86	0	166				
SS-22	05/22/85	1315	91	0.83	85	85	0	151				
SS-23	05/21/85	1325	1480	.80	129	129	0	1430				
SS-24	05/21/85	1355	1520	0.80	204	204	0	1230				
SS-25	05/22/85	1130	48	0.47	45	45	0	88				
SS-26	05/22/85	0945	114	0.87	85	85	0	182				
SS-27	05/21/85	1425	998	0.60	118	118	0	935				
SS-27A	05/21/85	1425										
SS-28	05/22/85	1000	38	0.64	71	71	0	118				
SS-29	05/22/85	1450	58	0.61	66	66	0	139				
PS-11A	06/05/85	1430	* 116	0.56	102	102	0	177				
PS-12	06/05/85	1030	116	0.70	82	82	0	163				
SS-18	06/05/85	0915	34	0.47	72	72	0	88				
SS-19	06/04/85	1445	62	1.7	94	94	0	235				
SS-20	06/05/85	0915	* 113	1.2	86	86	0	161				
SS-21	06/05/85	1250	112	1.2	90	90	0	165				
SS-22	06/05/85	1315	102	1.1	84	84	0	154				
SS-23	06/04/85	1625	1490	0.67	129	129	0	1440				
SS-24	06/04/85	1445	1370	0.84	197	197	0	1530				
SS-25	06/05/85	1130	80	0.51	80	80	0	135				
SS-26	06/05/85	1345	119	0.85	83	83	0	173				
SS-27	06/04/85	1530	707	0.48	115	115	0	766				
SS-27A	06/04/85	1500	1050	0.70	111	111	0	1110				
SS-28	06/05/85	1030	61	0.49	94	94	0	146				
SS-29	06/05/85	1145	88	0.58	86	86	0	119				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	05/22/85	1120	0.013	<0.00025	0.038	<0.030	0.0016	0.127	0.012	0.015	<0.011
PS-12	05/22/85	1245	0.011	<0.00025	0.056	<0.030	0.0015	0.127	0.018	0.026	<0.011
SS-18	05/22/85	0900	<0.014	<0.00025	0.034	<0.030	0.00013	0.465	0.027	0.012	<0.011
SS-19	05/21/85	1530	<0.014	0.00035	0.128	0.049	0.0093	0.677	0.031	0.242	0.055
SS-20	05/22/85	0840	<0.012	0.00042	0.082	<0.030	0.00080	0.304	0.031	0.073	0.019
SS-21	05/22/85	1420	0.012	0.00050	0.082	<0.030	0.0014	0.535	0.283	0.100	0.013
SS-22	05/22/85	1315	<0.012	<0.00025	0.072	<0.030	0.0013	0.456	0.026	0.102	0.015
SS-23	05/21/85	1325	0.0060	<0.00025	<0.035	<0.023	0.00080	0.666	0.016	0.102	0.070
SS-24	05/21/85	1355	<0.0038	<0.00025	0.051	<0.030	0.0016	0.598	0.011	0.038	0.031
SS-25	05/22/85	1130	<0.014	<0.00025	0.055	<0.030	0.0028	0.690	0.105	0.031	0.017
SS-26	05/22/85	0945	0.0093	<0.00025	0.060	<0.030	0.0043	0.302	<0.0080	0.039	0.012
SS-27	05/21/85	1425	0.0039	<0.00025	<0.035	<0.030	0.00065	0.948	0.010	0.016	<0.011
SS-27A	05/21/85	1425									
SS-28	05/22/85	1000	<0.014	<0.00025	0.085	<0.030	0.0071	1.51	0.015	0.040	0.027
SS-29	05/22/85	1450	0.012	<0.00025	0.099	<0.030	0.0015	0.495	0.026	0.029	<0.011
PS-11A	06/05/85	1430	0.011	<0.00025	0.0098	<0.015	0.00085	0.028	0.018	0.021	<0.012
PS-12	06/05/85	1030	0.014	0.00035	0.052	0.051	0.0018	0.180	0.047	0.098	0.065
SS-18	06/05/85	0915	0.105	<0.00025	0.015	<0.015	0.0016	0.213	0.083	0.018	0.026
SS-19	06/04/85	1445	0.048	0.0019	0.198	0.059	0.028	1.00	0.030	0.589	0.308
SS-20	06/05/85	0915	0.023	0.00065	0.056	0.026	0.0046	0.224	0.022	0.108	0.039
SS-21	06/05/85	1250	0.016	0.0010	0.080	0.030	0.0072	0.502	0.060	0.166	0.057
SS-22	06/05/85	1315	0.014	0.00074	0.058	0.033	0.0059	0.232	0.047	0.113	0.055
SS-23	06/04/85	1625	0.0098	<0.00025	0.012	<0.015	<0.00070	0.512	<0.012	0.117	0.136
SS-24	06/04/85	1445	<0.0016	<0.00055	0.013	<0.015	<0.00070	0.325	0.018	0.156	0.037
SS-25	06/05/85	1130	0.120	<0.00025	0.052	0.022	0.0020	0.509	0.190	0.062	0.039
SS-26	06/05/85	1345	0.015	0.00060	0.053	0.016	0.0048	0.461	0.022	0.019	0.023
SS-27	06/04/85	1530	0.0054	<0.00025	0.0073	<0.015	0.0011	0.586	0.033	0.021	<0.012
SS-27A	06/04/85	1500	0.034	<0.00050	0.080	<0.015	<0.0014	28.2	25.0	0.438	0.479
SS-28	06/05/85	1030	0.0059	<0.00025	0.014	<0.015	0.0026	0.138	0.020	0.010	<0.012
SS-29	06/05/85	1145	0.032	0.00038	0.045	<0.015	0.0033	0.292	0.048	0.062	0.026

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Carbon Dissolved
PS-11A	05/22/85	1120					
PS-12	05/22/85	1245					
SS-18	05/22/85	0900					
SS-19	05/21/85	1530					
SS-20	05/22/85	0840	POND 3				
SS-21	05/22/85	1420					
SS-22	05/22/85	1315					
SS-23	05/21/85	1325					
SS-24	05/21/85	1355					
SS-25	05/22/85	1130					
SS-26	05/22/85	0945	POND 2				
SS-27	05/21/85	1425					
SS-27A	05/21/85	1425	CATEGORY I - NO SAMPLE TAKEN				
SS-28	05/22/85	1000					
SS-29	05/22/85	1450					
PS-11A	06/05/85	1430					
PS-12	06/05/85	1030					
SS-18	06/05/85	0915					
SS-19	06/04/85	1445					
SS-20	06/05/85	0915	POND #3				
SS-21	06/05/85	1250					
SS-22	06/05/85	1315					
SS-23	06/04/85	1625					
SS-24	06/04/85	1445					
SS-25	06/05/85	1130					
SS-26	06/05/85	1345	POND #2				
SS-27	06/04/85	1530					
SS-27A	06/04/85	1500					
SS-28	06/05/85	1030					
SS-29	06/05/85	1145					

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS: Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS: Ortho-Phosphate	Total Phosphorus
PS-11A	06/19/85	1145	W2563	EDI	6.34	F	15.5	8.5	459		* <4	0.030	0.070
PS-12	06/19/85	1245	W2557	EDI	25.4	G	21.5	9.1	403		* <4	0.11	0.070
PS-12 CATI	06/19/85	1120	W2569		25.9	F	19.0	9.1	421				
SS-18	06/19/85	0820	W2560	EDI	25.4	F	11.0	7.6	200		* <4		
SS-19	06/18/85	1530	W2538	EDI	45.7	F	18.0	9.1	385		* 6	0.10	0.24
SS-20	06/19/85	0830	W2554	KEMMERER			18.0	9.6	358		* 5		
SS-21	06/19/85	0930	W2555	EDI	11.4	G	21.0	9.4	365		* 5	0.030	0.090
SS-22	06/19/85	1300	W2564	EDI	9.94	P	18.0	9.3	393		* 11	0.020	0.10
SS-23	06/18/85	1645	W2539	EDI	0.72	F	18.0	7.7	2740		* 5		
SS-24	06/18/85	1520	W2548	EDI	0.64	F	23.5	7.6	2440		* 9		
SS-25	06/19/85	1115	W2556	EDI	36.4	F	16.5	8.2	384		* <4		
SS-26	06/19/85	1330	W2558	KEMMERER			22.0	8.6	426		* <4		
SS-27	06/18/85	1610	W2549	GRAB	1.0	P	25.0	8.1	1560		* 8		
SS-27A	06/19/85	1415	W2559	GRAB	1.0	P	23.0	6.8	1420		* 38		
SS-28	06/19/85	0930	W2561	EDI	6.53	G	10.5	8.1	954		* <4		
SS-29	06/19/85	1020	W2562	EDI	55.3	G	15.0	8.0	495		* <4		
PS-11A	07-09-85	1600	W2592	EDI	6.45	F	21.0	8.6	485		2	0.030	0.040
PS-12	07-09-85	1650	W2593	EDI	11.5	F	24.0	9.2	437		4	0.12	0.14
SS-19	07-09-85	1225	W2589	EDI	39.2	F	21.0	8.6	442		18	0.14	0.34
SS-21	07-09-85	1400	W2590	EDI	5.37	F	24.0	8.3	466		5	0.020	0.070
SS-22	07-09-85	1450	W2591	EDI	4.53	F	22.0	8.6	437		<2	0.050	0.060
PS-11A	07/24/85	1345	W2685	GRAB COMP	07.4	P	21.0	8.6	457		4	0.020	0.72
PS-12	07/24/85	1115	W2674	EDI	10.0	G	22.0	9.2	451		7	0.33	0.36
PS-12 CATI	07/24/85	1530	W2687A		9.9		23.0	9.3	452				
PS-12 DUPE	07/24/85	1215	W2675	EDI	11.2	G	22.0	9.3	440		6	0.33	0.35
SS-18	07/25/85	0815	W2705	EDI	4.5	G	13.0	8.0	377		8		
SS-18A	07/25/85	1000	W2706	EDI	4.2	F	13.0	8.0	434				
SS-18B	07/25/85	1100	W2707	EDI	4.0	F	16.0	8.0	441				
SS-18C	07/25/85	1200	W2708	EDI	4.5	F	20.0	8.3	533				
SS-18D	07/25/85	1330	W2709	EDI	5.8	F	23.0	8.6	735				
SS-18E	07/25/85	1445	W2710	EDI	13.2	F	23.0	8.6	599				
SS-19	07/23/85	1930	W2654	EDI	28.2	F	24.0	9.4	428		8	0.21	0.35
SS-20	07/24/85	1145	W2683	KEMMERER	POND 3		22.0	8.5	428		4		
SS-21	07/24/85	1345	W2676	EDI	5.8	G	26.0	8.8	427		<4	0.050	0.10
SS-21 DUPE	07/24/85	1445	W2677	EDI	6.0	G	23.0	8.8	422		4	0.060	0.16
SS-22	07/24/85	1300	W2684	EDI	6.0	F	21.0	8.7	498		4	0.030	0.055
SS-23	07/24/85	0820	W2672	EDI	0.23	P	11.0	7.7	2230		4		
SS-24	07/24/85	0920	W2673	EDI	0.36	P	16.0	7.4	2660		11		
SS-25	07/24/85		W2680		15.0	G	17.0	8.2	696				
SS-25	07/25/85	1545	W2711	EDI	13.4	G	24.0	8.5	694		8		
SS-26	07/24/85	1430	W2686	GRAB	POND 2		23.0	10.1	460		3		
SS-27	07/24/85	1540	W2678										
SS-27A	07/24/85	1545	W2679										
SS-28	07/24/85	0930	W2681	EDI	0.90	F	17.0	8.0	1260		5		
SS-29	07/24/85	1040	W2682	EDI	19.3	G	18.0	8.0	618		10		

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	06/19/85	1145	116	0.70	97	97	0	127				
PS-12	06/19/85	1245	124	0.70	52	52	0	110				
PS-12 CATI	06/19/85	1120										
SS-18	06/19/85	0820	30	0.70	74	74	0	52				
SS-19	06/18/85	1530	74	2.0	98	98	0	137				
SS-20	06/19/85	0830	94	1.0	70	70	0	79				
SS-21	06/19/85	0930	105	1.0	70	70	0	145				
SS-22	06/19/85	1300	113	0.90	65	65	0	150				
SS-23	06/18/85	1645	1450	0.90	119	119	0	1510				
SS-24	06/18/85	1520	1440	0.90	195	195	0	1680				
SS-25	06/19/85	1115	101	0.90	90	90	0	110				
SS-26	06/19/85	1330	126	0.70	63	63	0	125				
SS-27	06/18/85	1610	853	0.80	96	96	0	898				
SS-27A	06/19/85	1415	609	0.60	118	118	0	675				
SS-28	06/19/85	0930	358	1.4	164	164	0	488				
SS-29	06/19/85	1020	170	0.90	88	88	0	147				
PS-11A	07-09-85	1600	112	<2.0	94	94	0	67				
PS-12	07-09-85	1650	152	<2.0	52	52	0	79				
SS-19	07-09-85	1225	73	2.1	105	105	0	154				
SS-21	07-09-85	1400	113	<2.0	87	87	0	115				
SS-22	07-09-85	1450	105	<2.0	82	82	0	98				
PS-11A	07/24/85	1345	103	<2	94	94	0	182				
PS-12	07/24/85	1115	151	<2	56	56	0	98				
PS-12 CATI	07/24/85	1530										
PS-12 DUPE	07/24/85	1215	140	<2	54	54	0	110				
SS-18	07/25/85	0815	47	<2	125	125	0	218				
SS-18A	07/25/85	1000	85		124	124	0					
SS-18B	07/25/85	1100	94		124	124	0					
SS-18C	07/25/85	1200	148		123	123	0					
SS-18D	07/25/85	1330	228		112	112	0					
SS-18E	07/25/85	1445	179		108	108	0					
SS-19	07/23/85	1930	68	2.4	105	105	0	148				
SS-20	07/24/85	1145	98	<2	87	87	0	112				
SS-21	07/24/85	1345	103	<2	94	94	0	154				
SS-21 DUPE	07/24/85	1445	104	<2	93	93	0	170				
SS-22	07/24/85	1300	109	<2	84	84	0	88				
SS-23	07/24/85	0820	1380	6.0	116	116	0	1390				
SS-24	07/24/85	0920	1580	<2	200	200	0	1750				
SS-25	07/24/85											
SS-25	07/25/85	1545	190	<2	107	107	0	273				
SS-26	07/24/85	1430	124	<2	52	52	0	72				
SS-27	07/24/85	1540										
SS-27A	07/24/85	1545										
SS-28	07/24/85	0930	601	<2	171	171	0	633				
SS-29	07/24/85	1040	197	<2	99	99	0	176				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	06/19/85	1145	0.014	<0.0010	0.021	<0.021	<0.0026	0.085	<0.021	0.023	<0.0060
PS-12	06/19/85	1245	0.0015	<0.0010	0.016	<0.021	<0.0023	0.121	0.021	0.024	<0.0060
PS-12 CATI	06/19/85	1120									
SS-18	06/19/85	0820	0.040	<0.0010	0.018	<0.021	<0.0026	0.250	0.446	0.018	<0.0060
SS-19	06/18/85	1530	<0.0014	0.0010	0.138	0.038	0.0083	1.40	0.026	0.378	0.038
SS-20	06/19/85	0830	0.0016	<0.0010	0.030	0.020	<0.0023	0.129	0.021	0.036	<0.0060
SS-21	06/19/85	0930	0.0014	<0.0010	0.029	<0.021	<0.0023	0.412	0.035	0.051	<0.0060
SS-22	06/19/85	1300	0.014	<0.0010	0.044	0.026	0.0051	0.344	<0.021	0.084	<0.0060
SS-23	06/18/85	1645	<0.0014	<0.0010	<0.024	<0.0090	<0.0010	0.246	<0.0090	0.063	0.061
SS-24	06/18/85	1520	0.0015	<0.0010	0.055	<0.0090	<0.0023	0.287	<0.0090	1.68	0.019
SS-25	06/19/85	1115	0.0016	<0.0010	0.019	<0.021	<0.0023	0.275	0.062	0.027	<0.0060
SS-26	06/19/85	1330	0.0046	<0.0010	0.022	<0.021	<0.0023	0.224	0.052	0.048	<0.0060
SS-27	06/18/85	1610	0.0017	<0.0010	<0.012	<0.0090	<0.0023	0.660	0.028	0.023	<0.0060
SS-27A	06/19/85	1415	0.0017	<0.0010	0.041	<0.021	<0.0023	13.5	6.49	0.243	0.240
SS-28	06/19/85	0930	0.0072	<0.0010	0.011	<0.021	<0.0026	0.112	<0.021	0.016	<0.0060
SS-29	06/19/85	1020	0.016	<0.0010	0.024	<0.021	<0.0026	0.175	0.046	0.033	<0.0060
PS-11A	07-09-85	1600	0.023	<0.00050	0.022	<0.015	0.0016	0.082	<0.0060	0.0080	<0.0050
PS-12	07-09-85	1650	0.0126	0.00040	0.031	<0.015	0.0025	0.142	0.0090	0.033	<0.0050
SS-19	07-09-85	1225	0.034	0.0018	0.228	0.042	0.015	0.860	0.016	0.480	0.062
SS-21	07-09-85	1400	0.020	0.00040	0.051	<0.015	0.0024	0.550	<0.0060	0.049	<0.0050
SS-22	07-09-85	1450	0.017	<0.00050	0.026	<0.015	<0.00060	0.138	<0.0060	0.027	<0.0050
PS-11A	07/24/85	1345	0.018	<0.00020	0.048	<0.023	<0.0016	0.131	0.0060	0.019	<0.0060
PS-12	07/24/85	1115	0.018	0.00050	0.024	<0.016	0.0013	0.112	<0.019	0.026	0.0090
PS-12 CATI	07/24/85	1530									
PS-12 DUPE	07/24/85	1215	0.030	0.00030	0.020	<0.016	<0.0015	0.097	0.026	0.024	<0.0060
SS-18	07/25/85	0815	0.034	0.00020	0.021	0.016	<0.0016	0.170	0.035	0.010	<0.029
SS-18A	07/25/85	1000			0.032	<0.010				0.024	<0.029
SS-18B	07/25/85	1100			0.040	<0.010				0.019	<0.029
SS-18C	07/25/85	1200			0.035	0.022				0.043	<0.029
SS-18D	07/25/85	1330			<0.0060	0.019				0.0050	<0.029
SS-18E	07/25/85	1445			0.028	0.015				0.016	<0.029
SS-19	07/23/85	1930	0.021	0.00060	0.097	0.044	0.0018	0.435	0.058	0.256	0.054
SS-20	07/24/85	1145	0.013	0.00030	0.048	<0.023	<0.0016	0.139	0.011	0.054	0.010
SS-21	07/24/85	1345	0.015	0.00050	0.120	<0.016	<0.0015	0.558	0.038	0.054	0.012
SS-21 DUPE	07/24/85	1445	0.020	0.00030	0.067	<0.016	<0.0015	0.645	0.019	0.075	0.0070
SS-22	07/24/85	1300	0.012	<0.00020	0.051	<0.023	<0.0016	0.104	<0.0050	0.028	<0.0060
SS-23	07/24/85	0820	0.0043	0.00020	0.027	<0.016	0.0012	0.350	<0.019	0.091	0.054
SS-24	07/24/85	0920	0.0030	0.00030	0.030	<0.016	<0.0015	0.229	0.021	0.042	0.033
SS-25	07/24/85										
SS-25	07/25/85	1545	0.022	0.00030	0.017	<0.010	<0.0016	0.213	0.033	0.028	<0.029
SS-26	07/24/85	1430	0.019	<0.00020	0.056	<0.023	<0.0016	0.182	0.032	0.030	<0.0060
SS-27	07/24/85	1540									
SS-27A	07/24/85	1545									
SS-28	07/24/85	0930	0.011	0.00030	0.038	<0.023	<0.0015	0.024	0.0090	0.012	0.013
SS-29	07/24/85	1040	0.018	0.00020	0.061	<0.023	<0.0016	0.202	0.014	0.033	0.013

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Dissolved
PS-11A	06/19/85	1145					
PS-12	06/19/85	1245					
PS-12 CATI	06/19/85	1120	Category I-no sample				
SS-18	06/19/85	0820					
SS-19	06/18/85	1530					
SS-20	06/19/85	0830	POND #3				
SS-21	06/19/85	0930					
SS-22	06/19/85	1300					
SS-23	06/18/85	1645					
SS-24	06/18/85	1520					
SS-25	06/19/85	1115					
SS-26	06/19/85	1330	POND #2				
SS-27	06/18/85	1610					
SS-27A	06/19/85	1415					
SS-28	06/19/85	0930					
SS-29	06/19/85	1020					
PS-11A	07-09-85	1600	MASS BALANCE				
PS-12	07-09-85	1650	MASS BALANCE				
SS-19	07-09-85	1225	MASS BALANCE				
SS-21	07-09-85	1400	MASS BALANCE				
SS-22	07-09-85	1450	MASS BALANCE				
PS-11A	07/24/85	1345					
PS-12	07/24/85	1115					
PS-12 CATI	07/24/85	1530					
PS-12 DUPE	07/24/85	1215					
SS-18	07/25/85	0815					
SS-18A	07/25/85	1000					
SS-18B	07/25/85	1100					
SS-18C	07/25/85	1200					
SS-18D	07/25/85	1330					
SS-18E	07/25/85	1445					
SS-19	07/23/85	1930					
SS-20	07/24/85	1145					
SS-21	07/24/85	1345					
SS-21 DUPE	07/24/85	1445					
SS-22	07/24/85	1300					
SS-23	07/24/85	0820					
SS-24	07/24/85	0920					
SS-25	07/24/85						
SS-25	07/25/85	1545					
SS-26	07/24/85	1430	POND 2				
SS-27	07/24/85	1540					
SS-27A	07/24/85	1545					
SS-28	07/24/85	0930					
SS-29	07/24/85	1040					

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS Discharge and Rating (CFS)		Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	Total Dissolved Solids	Total Suspended Sediment	PHOSPHORUS Ortho-Phosphate	Total Phosphorus
PS-11A	08-06-85	1415	W2724	GRAB COMP	7.62	P	19.0	8.2	455		<5	<0.035	0.050
PS-12	08-06-85	1500	W2725	EDI	34.0	G	21.0	9.2	471		<5	0.16	0.19
SS-19	08-06-85	1045	W2721	EDI	47.3	F	15.0	8.0	361		8	0.18	0.33
SS-21	08-06-85	1150	W2722	EDI	14.5	G	11.0	8.7	410		<5	0.040	0.050
SS-22	08-06-85	1310	W2723	EDI	12.7	F	19.0	8.7	402		<5	<0.035	0.060
PS-11A	08/29/85	1345	W2809	GRAB COMP	6.26	F	20.0	6.6	773		<5	0.030	0.040
PS-12	08/29/85	1340	W2801	EDI	14.6	F	21.0	9.7	433		7	0.10	0.14
PS-12 CATI	08/29/85	1300	W2812		12.5	G	22.0	9.6	447				
PS-12 CATI	08/29/85	1515	W2819		12.8	F	19.0	9.2	432				
PS-12 DUPE	08/29/85	1435	W2802	EDI	15.1	F	21.0	9.7	430		9	0.10	0.14
SS-18	08/29/85	0830	W2813	EDI	3.31	G	12.0	7.9	398				
SS-18A	08/29/85	1000	W2814	EDI	3.47	G	12.0	8.0	441				
SS-18B	08/29/85	1100	W2815	EDI	4.31	G	14.0	7.6	474				
SS-18C	08/29/85	1215	W2816	EDI	4.91	F	16.0	8.0	653				
SS-18D	08/29/85	1345	W2817	EDI	6.33	F	18.0	8.4	722				
SS-18E	08/29/85	1445	W2818	EDI	14.2	F	18.0	8.4	628				
SS-19	08/28/85	1730	W2795	EDI	29.1	F	22.0	9.5	393		8	0.22	0.42
SS-20	08/29/85	1050	W2807	KEMMERER			18.0	8.9	450		6		
SS-21	08/29/85	1140	W2799	EDI	5.19	F	19.0	9.0	412		7	<0.026	0.070
SS-21 DUPE	08/29/85	1230	W2800	EDI	5.05	F	19.0	9.1	424		11	<0.026	0.05
SS-22	08/29/85	1150	W2808	EDI	5.42	F	19.0	9.2	399		6	0.060	0.060
SS-23	08/29/85	0830	W2796	EDI	0.15	P	11.0		2400				
SS-24	08/29/85	0915	W2797	EDI	0.41	F	14.0	7.5	2590				
SS-25	08/29/85	1510	W2811	EDI	12.9	G	21.0	8.0	785				
SS-26	08/29/85	1015	W2806	KEMMERER			15.0		464		<5		
SS-27	08/29/85	1535	W2803										
SS-27A	08/29/85	1030	W2798	GRAB	EST 1.3	F	13.0	6.4	1710				
SS-28	08/29/85	0845	W2804	EDI	5.39	G	12.0	8.0	1420				
SS-29	08/29/85	0950	W2805	EDI	25.5	G	15.0	8.0	701				
PS-11A	09-11-85	1600	W2846	EDI	6.77	F	16.0	8.0	443		<4	0.080	0.080
PS-12	09-11-85	1645	W2847	EDI	32.0	F	14.5	9.2	421		4	0.050	0.010
SS-19	09-11-85	1245	W2843	EDI	49.6	F	14.0	8.7	702		9	0.12	0.32
SS-21	09-11-85	1400	W2844	EDI	17.1	F	16.5	9.0	402		8	0.030	0.16
SS-22	09-11-85	1600	W2845	EDI	15.6	F	14.5	9.1	396		11	0.030	0.060

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Sampling method: EDI - equal discharge integration. EWI - equal width integration.
Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

			COMMON IONS:						ORGANICS:			
STATION	SAMPLE DATE	SAMPLE TIME	Sulfate	Nitrate as N	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Oil and Grease	Cyanide	PCP	PCB
PS-11A	08-06-85	1415	131	<2.0	82	82	0	30				
PS-12	08-06-85	1500	141	<2.0	40	40	0	158				
SS-19	08-06-85	1045	59	3.8	103	103	0	156				
SS-21	08-06-85	1150	121	2.5	82	82	0	75				
SS-22	08-06-85	1310	126	<2.0	82	82	0	62				
PS-11A	08/29/85	1345	118	1.6	108	108	0	200				
PS-12	08/29/85	1340	143	1.2	43	43	0	165				
PS-12 CATI	08/29/85	1300										
PS-12 CATI	08/29/85	1515										
PS-12 DUPE	08/29/85	1435	143	1.4	44	44	0	120				
SS-18	08/29/85	0830	78		120	120	0					
SS-18A	08/29/85	1000	118		120	120	0					
SS-18B	08/29/85	1100	142		126	126	0					
SS-18C	08/29/85	1215	217		122	122	0					
SS-18D	08/29/85	1345	289		115	115	0					
SS-18E	08/29/85	1445	224		110	110	0					
SS-19	08/28/85	1730	81	3.8	106	106	0	156				
SS-20	08/29/85	1050	110	1.5	60	60	0	148				
SS-21	08/29/85	1140	139	2.2	64	64	0	164				
SS-21 DUPE	08/29/85	1230	121	1.1	66	66	0	173				
SS-22	08/29/85	1150	118	1.4	62	62	0	161				
SS-23	08/29/85	0830	1490		115	115	0					
SS-24	08/29/85	0915	1510		158	158	0					
SS-25	08/29/85	1510	237		112	112	0					
SS-26	08/29/85	1015	114	1.8	43	43	0	109				
SS-27	08/29/85	1535										
SS-27A	08/29/85	1030	889		96	96	0					
SS-28	08/29/85	0845	622		121	121	0					
SS-29	08/29/85	0950	263		110	110	0					
PS-11A	09-11-85	1600	121	2	98	98	0	97				
PS-12	09-11-85	1645	154	2	49	49	0	171				
SS-19	09-11-85	1245	76	5.2	100	100	0	164				
SS-21	09-11-85	1400	123	<2	68	68	0	165				
SS-22	09-11-85	1600	120	<2	66	66	0	154				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Copper Dissolved	Lead Total	Iron Total	Iron Dissolved	Zinc Total	Zinc Dissolved
PS-11A	08-06-85	1415	0.019	<0.00050	0.012	0.023	0.0011	0.049	0.055	0.0060	0.066
PS-12	08-06-85	1500	0.016	<0.0014	0.022	<0.015	0.0018	0.147	0.018	0.026	<0.0050
SS-19	08-06-85	1045	0.020	0.0021	0.191	0.048	0.014	0.802	0.023	0.484	0.273
SS-21	08-06-85	1150	0.012	0.00070	0.047	<0.015	0.0018	0.382	0.027	0.054	0.0050
SS-22	08-06-85	1310	0.012	0.00040	0.035	<0.015	0.0018	0.172	0.324	0.043	<0.0050
PS-11A	08/29/85	1345	0.013	<0.00025	<0.0050	<0.021	0.00060	0.025	<0.015	0.0090	<0.017
PS-12	08/29/85	1340	0.013	<0.00025	0.012	<0.019	0.0018	0.157	<0.015	0.038	<0.017
PS-12 CATI	08/29/85	1300									
PS-12 CATI	08/29/85	1515									
PS-12 DUPE	08/29/85	1435	0.011	<0.00025	0.018	<0.019	0.0021	0.213	<0.015	0.040	<0.017
SS-18	08/29/85	0830			0.0070	<0.021				0.014	<0.016
SS-18A	08/29/85	1000			0.012	<0.021				0.028	<0.016
SS-18B	08/29/85	1100			0.024	<0.021				0.046	<0.016
SS-18C	08/29/85	1215			0.035	<0.021				0.047	<0.016
SS-18D	08/29/85	1345			0.046	<0.021				0.057	0.015
SS-18E	08/29/85	1445			0.015	<0.021				0.022	<0.011
SS-19	08/28/85	1730	0.016	0.00046	0.126	0.052	0.0026	0.497	0.038	0.414	0.063
SS-20	08/29/85	1050	0.010	<0.00025	0.014	<0.021	0.00090	0.145	<0.015	0.044	<0.017
SS-21	08/29/85	1140	0.0069	<.00025	0.031	<0.019	0.0013	0.549	<0.015	0.072	<0.017
SS-21 DUPE	08/29/85	1230	0.0081	0.00028	0.033	<0.019	0.0018	0.718	0.030	0.076	0.030
SS-22	08/29/85	1150	0.0057	<0.00025	0.017	<0.021	0.00080	0.126	0.016	0.047	<0.017
SS-23	08/29/85	0830			0.027	<0.019				0.110	0.069
SS-24	08/29/85	0915			0.006	<0.019				0.035	0.024
SS-25	08/29/85	1510			0.017	<0.021				0.031	<0.016
SS-26	08/29/85	1015	0.0072	<0.00025	0.010	<0.021	0.0013	0.067	<0.015	0.010	<0.017
SS-27	08/29/85	1535									
SS-27A	08/29/85	1030			0.025	<0.019				0.363	0.426
SS-28	08/29/85	0845			0.0050	<0.019				0.011	<0.016
SS-29	08/29/85	0950			0.013	[illegible]				0.029	<0.016
PS-11A	09-11-85	1600	0.012	<0.0014	<0.0080	<0.015	0.0011	0.040	<0.0060	0.0040	0.0060
PS-12	09-11-85	1645	0.0093	<0.0014	0.016	<0.015	0.0016	0.107	<0.0060	0.027	<0.0050
SS-19	09-11-85	1245	0.018	0.0019	0.237	0.056	0.0079	0.894	0.028	0.642	0.229
SS-21	09-11-85	1400	0.0089	<0.0014	0.039	<0.015	0.0020	0.455	0.0060	0.098	0.0070
SS-22	09-11-85	1600	0.0075	<0.0014	0.044	<0.015	0.0016	0.290	<0.0060	0.079	0.0070

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	DATE	TIME	COMMENTS:	EXTRA PARAMETERS Fluoride	BOD	Organic Carbon Total	Dissolved
PS-11A	08-06-85	1415	MASS BALANCE				
PS-12	08-06-85	1500	MASS BALANCE				
SS-19	08-06-85	1045	MASS BALANCE				
SS-21	08-06-85	1150	MASS BALANCE				
SS-22	08-06-85	1310	MASS BALANCE				
PS-11A	08/29/85	1345					
PS-12	08/29/85	1340					
PS-12 CATI	08/29/85	1300					
PS-12 CATI	08/29/85	1515					
PS-12 DUPE	08/29/85	1435					
SS-18	08/29/85	0830					
SS-18A	08/29/85	1000					
SS-18B	08/29/85	1100					
SS-18C	08/29/85	1215					
SS-18D	08/29/85	1345					
SS-18E	08/29/85	1445					
SS-19	08/28/85	1730					
SS-20	08/29/85	1050	POND #3				
SS-21	08/29/85	1140					
SS-21 DUPE	08/29/85	1230					
SS-22	08/29/85	1150					
SS-23	08/29/85	0830					
SS-24	08/29/85	0915					
SS-25	08/29/85	1510					
SS-26	08/29/85	1015	POND #2				
SS-27	08/29/85	1535					
SS-27A	08/29/85	1030					
SS-28	08/29/85	0845					
SS-29	08/29/85	0950					
PS-11A	09-11-85	1600	MASS BALANCE				
PS-12	09-11-85	1645	MASS BALANCE				
SS-19	09-11-85	1245	MASS BALANCE				
SS-21	09-11-85	1400	MASS BALANCE				
SS-22	09-11-85	1600	MASS BALANCE				

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	Discharge and Rating (CFS)		PHYSICAL PARAMETERS Water Temperature (C)	Field pH	Specific Conductance (umhos/cm)	CATION/ANION BALANCE Total Cations (meq/l)	Total Anions (meq/l)	Percent Difference
PS-11A	07/24/85	1345	W2685	GRAB COMPO	7.4	P	21.0	8.6	457	4.3	4.3	0.0
PS-12	07/24/85	1115	W2674	EDI	10.0	G	22.0	9.2	451	4.2	4.5	-6.9
PS-12 CATI	07/24/85	1530	W2687A		9.9		23.0	9.3	452			
PS-12 DUPE	07/24/85	1215	W2675	EDI	11.2	G	22.0	9.3	440	4.1	4.2	-2.4
SS-18	07/25/85	0815	W2705	EDI	4.5	G	13.0	8.0	377	3.6	3.6	0.0
SS-18A	07/25/85	1000	W2706	EDI	4.2	F	13.0	8.0	434	4.2	4.3	-2.4
SS-18B	07/25/85	1100	W2707	EDI	4.0	F	16.0	8.0	441	4.5	4.5	0.0
SS-18C	07/25/85	1200	W2708	EDI	4.5	F	20.0	8.3	533	5.4	5.6	-3.6
SS-18D	07/25/85	1330	W2709	EDI	5.8	F	23.0	8.6	735	7.0	7.1	-1.4
SS-18E	07/25/85	1445	W2710	EDI	13.2	F	23.0	8.6	599	6.2	6.1	1.6
SS-19	07/23/85	1930	W2654	EDI	28.2	F	24.0	9.4	428	3.6	3.7	-2.7
SS-20	07/24/85	1145	W2683	KEMMERER	POND 3		22.0	8.5	428	4.3	4.1	4.8
SS-21	07/24/85	1345	W2676	EDI	5.8	G	26.0	8.8	427	4.0	4.3	-7.2
SS-21 DUPE	07/24/85	1445	W2677	EDI	6.0	G	23.0	8.8	422	4.1	4.3	-4.8
SS-22	07/24/85	1300	W2684	EDI	6.0	F	21.0	8.7	498	4.3	4.2	2.4
SS-23	07/24/85	0820	W2672	EDI	0.23	P	11.0	7.7	2230	29.3	31.2	-6.3
SS-24	07/24/85	0920	W2673	EDI	0.36	P	16.0	7.4	2660	36.7	37.1	-1.1
SS-25 CATI	07/24/85		W2680		15.0	G	17.0	8.2	696			
SS-25	07/25/85	1545	W2711	EDI	13.4	G	24.0	8.5	694	6.5	6.3	3.1
SS-26	07/24/85	1430	W2686	GRAB	POND 2		23.0	10.1	460	4.0	3.9	2.5
SS-27	07/24/85	1540	W2678									
SS-27A	07/24/85	1545	W2679									
SS-28	07/24/85	0930	W2681	EDI	0.90	F	17.0	8.0	1260	13.4	16.0	-17.7
SS-29	07/24/85	1040	W2682	EDI	19.3	G	18.0	8.0	618	5.9	6.3	-6.6
PS-11A	08/29/85	1345	W2809	GRAB COMPO	6.26	F	20.0	6.6	773	4.6	4.9	-6.3
PS-12	08/29/85	1340	W2801	EDI	14.6	F	21.0	9.7	433	4.4	4.1	7.1
PS-12 CATI	08/29/85	1300	W2812		12.5	G	22.0	9.6	447			
PS-12 CATI	08/29/85	1515	W2819		12.8	F	19.0	9.2	432			
PS-12 DUPE	08/29/85	1435	W2802	EDI	15.1	F	21.0	9.7	430	4.6	4.2	9.1
SS-18	08/29/85	0830	W2813	EDI	3.31	G	12.0	7.9	398	4.1	4.3	-4.8
SS-18A	08/29/85	1000	W2814	EDI	3.47	G	12.0	8.0	441	4.9	5.0	-2.0
SS-18B	08/29/85	1100	W2815	EDI	4.31	G	14.0	7.6	474	5.4	5.6	-3.6
SS-18C	08/29/85	1215	W2816	EDI	4.91	F	16.0	8.0	653	7.2	7.1	1.4
SS-18D	08/29/85	1345	W2817	EDI	6.33	F	18.0	8.4	722	7.9	8.5	-7.3
SS-18E	08/29/85	1445	W2818	EDI	14.2	F	18.0	8.4	628	6.5	7.1	-8.8
SS-19	08/28/85	1730	W2795	EDI	29.1	F	22.0	9.5	393	4.4	4.2	4.7
SS-20	08/29/85	1050	W2807	KEMMERER			18.0	8.9	450	3.8	3.8	0.0
SS-21	08/29/85	1140	W2799	EDI	5.19	F	19.0	9.0	412	4.3	4.5	-4.5
SS-21 DUPE	08/29/85	1230	W2800	EDI	5.05	F	19.0	9.1	424	4.4	4.2	4.7
SS-22	08/29/85	1150	W2808	EDI	5.42	F	19.0	9.2	399	3.9	4.0	-2.5
SS-23	08/29/85	0830	W2796	EDI	0.15	P	11.0		2400	35.5	33.5	5.8
SS-24	08/29/85	0915	W2797	EDI	0.41	F	14.0	7.5	2590	39.4	34.8	12.4
SS-25	08/29/85	1510	W2811	EDI	12.9	G	21.0	8.0	785	7.5	7.4	1.3
SS-26	08/29/85	1015	W2806	KEMMERER			15.0		464	4.2	3.6	15.4
SS-27	08/29/85	1535	W2803									
SS-27A	08/29/85	1030	W2798	GRAB	EST 1.3	F	13.0	6.4	1710	22.3	20.8	7.0
SS-28							12.0		1420	17.4	15.5	11.6
SS-29							15.0			8.2	7.9	3.7

Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

STATION	SAMPLE DATE	SAMPLE TIME	COMMON IONS: Sulfate	Chloride	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Sodium	Calcium	Magnesium	Potassium
PS-11A	07/24/85	1345	103	8.5	94	94	0	20.1	47.0	11.2	4.9
PS-12	07/24/85	1115	151	9.0	56	56	0	19.7	41.5	14.9	3.3
PS-12 CATI	07/24/85	1530									
PS-12 DUPE	07/24/85	1215	140	9.0	54	54	0	17.8	39.9	14.8	3.1
SS-18	07/25/85	0815	47	4.0	125	125	0	12.4	42.0	11.2	1.9
SS-18A	07/25/85	1000	85	2.6	124	124	0	13.2	49.6	12.7	1.9
SS-18B	07/25/85	1100	94	2.5	124	124	0	13.2	54.4	13.4	2.0
SS-18C	07/25/85	1200	148	2.1	123	123	0	13.8	67.2	16.4	1.7
SS-18D	07/25/85	1330	228	4.3	112	112	0	15.7	89.2	21.0	3.4
SS-18E	07/25/85	1445	179	6.2	108	108	0	18.2	76.3	17.8	5.1
SS-19	07/23/85	1930	68	7.4	105	105	0	21.5	37.1	8.9	4.6
SS-20	07/24/85	1145	98	12.0	87	87	0	21.9	42.6	13.4	4.5
SS-21	07/24/85	1345	103	10.0	94	94	0	17.6	42.8	12.1	4.3
SS-21 DUPE	07/24/85	1445	104	10.0	93	93	0	18.3	43.7	12.3	4.3
SS-22	07/24/85	1300	109	7.4	84	84	0	21.5	41.7	13.7	4.7
SS-23	07/24/85	0820	1380	6.0	116	116	0	17.9	446	72.5	9.0
SS-24	07/24/85	0920	1580	7.4	200	200	0	10.5	592	77.4	10.0
SS-25 CATI	07/24/85										
SS-25	07/25/85	1545	190	6.4	107	107	0	18.1	79.9	18.8	4.8
SS-26	07/24/85	1430	124	9.2	52	52	0	25.3	32.2	14.9	3.0
SS-27	07/24/85	1540									
SS-27A	07/24/85	1545									
SS-28	07/24/85	0930	601	3.0	171	171	0	8.0	196	38.0	3.0
SS-29	07/24/85	1040	197	8.5	99	99	0	17.9	71.2	18.1	4.0
PS-11A	08/29/85	1345	118	10.0	108	108	0	18.9	53.5	12.0	5.56
PS-12	08/29/85	1340	143	10.2	43	43	0	23.3	39.8	15.3	5.02
PS-12 CATI	08/29/85	1300									
PS-12 CATI	08/29/85	1515									
PS-12 DUPE	08/29/85	1435	143	10.6	44	44	0	24.1	41.1	16.0	5.16
SS-18	08/29/85	0830	78	8.4	120	120	0	12.8	49.0	12.5	1.82
SS-18A	08/29/85	1000	118	3.6	120	120	0	13.6	62.8	14.1	1.76
SS-18B	08/29/85	1100	142	3.8	126	126	0	13.6	69.6	15.4	2.09
SS-18C	08/29/85	1215	217	4.2	122	122	0	15.0	95.3	20.3	2.73
SS-18D	08/29/85	1345	289	5.5	115	115	0	16.3	103	22.7	4.76
SS-18E	08/29/85	1445	224	8.0	110	110	0	19.1	80.0	18.1	5.42
SS-19	08/28/85	1730	81	14.0	106	106	0	25.2	45.4	10.4	5.83
SS-20	08/29/85	1050	110	11.0	60	60	0	20.6	35.3	12.5	4.69
SS-21	08/29/85	1140	139	10.8	64	64	0	21.0	40.6	14.3	5.07
SS-21 DUPE	08/29/85	1230	121	11.5	66	66	0	21.6	42.6	14.4	4.95
SS-22	08/29/85	1150	118	11.0	62	62	0	20.4	37.2	13.0	4.72
SS-23	08/29/85	0830	1490	7.0	115	115	0	21.2	544	86.4	10.3
SS-24	08/29/85	0915	1510	7.0	158	158	0	12.6	638	80.4	10.6
SS-25	08/29/85	1510	237	8.4	112	112	0	18.1	97.3	20.9	5.39
SS-26	08/29/85	1015	114	11.4	43	43	0	23.4	35.1	15.9	3.91
SS-27	08/29/85	1535									
SS-27A	08/29/85	1030	889	13.6	96	96	0	36.8	315	57.3	8.55
SS-28						121		9.93	267	42.5	3.39
SS-29						110			107	23.2	5.02

Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

METALS:

STATION	SAMPLE DATE	SAMPLE TIME	Copper Total	Copper Total Extractable	Copper Dissolved	Zinc Total	Zinc Total Extractable	Zinc Dissolved	COMMENTS:
PS-11A	07/24/85	1345	0.048	<0.017	<0.023	0.019	0.024	<0.0060	
PS-12	07/24/85	1115	0.024	0.024	<0.016	0.026	0.052	0.0090	
PS-12 CATI	07/24/85	1530							
PS-12 DUPE	07/24/85	1215	0.020	<0.011	<0.016	0.024	0.043	<0.0060	
SS-18	07/25/85	0815	0.021	0.024	0.016	0.010	0.029	<0.029	
SS-18A	07/25/85	1000	0.032	<0.017	<0.010	0.024	0.054	<0.029	
SS-18B	07/25/85	1100	0.040	<0.017	<0.010	0.019	0.039	<0.029	
SS-18C	07/25/85	1200	0.035	0.046	0.022	0.043	0.067	<0.029	
SS-18D	07/25/85	1330	<0.0060	0.024	0.019	0.0050	0.044	<0.029	
SS-18E	07/25/85	1445	0.028	<0.017	0.015	0.016	0.034	<0.029	
SS-19	07/23/85	1930	0.097	0.103	0.044	0.256	0.320	0.054	
SS-20	07/24/85	1145	0.048	0.027	<0.023	0.054	0.042	0.010	
SS-21	07/24/85	1345	0.120	0.040	<0.016	0.054	0.090	0.012	
SS-21 DUPE	07/24/85	1445	0.067	0.030	<0.016	0.075	0.090	0.0070	
SS-22	07/24/85	1300	0.051	<0.017	<0.023	0.028	0.047	<0.0060	
SS-23	07/24/85	0820	0.027	<0.011	<0.016	0.091	0.087	0.054	
SS-24	07/24/85	0920	0.030	<0.011	<0.016	0.042	0.058	0.033	
SS-25 CATI	07/24/85								
SS-25	07/25/85	1545	0.017	0.018	<0.010	0.028	0.048	<0.029	
SS-26	07/24/85	1430	0.056	0.023	<0.023	0.030	0.053	<0.0060	POND 2
SS-27	07/24/85	1540							
SS-27A	07/24/85	1545							
SS-28	07/24/85	0930	0.038	<0.017	<0.023	0.012	0.029	0.013	
SS-29	07/24/85	1040	0.061	0.021	<0.023	0.033	0.046	0.013	
PS-11A	08/29/85	1345	<0.0050	<0.030	<0.021	0.0090	0.017	<0.017	
PS-12	08/29/85	1340	0.012	<0.030	<0.019	0.038	0.043	<0.017	
PS-12 CATI	08/29/85	1300							
PS-12 CATI	08/29/85	1515							
PS-12 DUPE	08/29/85	1435	0.018	<0.030	<0.019	0.040	0.059	<0.017	
SS-18	08/29/85	0830	0.0070	<0.030	<0.021	0.014	0.032	<0.016	
SS-18A	08/29/85	1000	0.012	<0.030	<0.021	0.028	0.044	<0.016	
SS-18B	08/29/85	1100	0.024	<0.030	<0.021	0.046	0.047	<0.016	
SS-18C	08/29/85	1215	0.035	0.036	<0.021	0.047	0.064	<0.016	
SS-18D	08/29/85	1345	0.046	0.034	<0.021	0.057	0.061	0.015	
SS-18E	08/29/85	1445	0.015	<0.020	<0.021	0.022	0.026	<0.011	
SS-19	08/28/85	1730	0.126	0.155	0.052	0.414	0.449	0.063	
SS-20	08/29/85	1050	0.014	<0.030	<0.021	0.044	0.069	<0.017	POND #3
SS-21	08/29/85	1140	0.031	0.033	<0.019	0.072	0.085	<0.017	
SS-21 DUPE	08/29/85	1230	0.033	<0.030	<0.019	0.076	0.098	0.030	
SS-22	08/29/85	1150	0.017	<0.030	<0.021	0.047	0.064	<0.017	
SS-23	08/29/85	0830	0.027	<0.030	<0.019	0.110	0.157	0.069	
SS-24	08/29/85	0915	0.006	<0.030	<0.019	0.035	0.041	0.024	
SS-25	08/29/85	1510	0.017	<0.030	<0.021	0.031	0.040	<0.016	
SS-26	08/29/85	1015	0.010	<0.030	<0.021	0.010	0.017	<0.017	POND #2
SS-27	08/29/85	1535							
SS-27A	08/29/85	1030	0.025	0.033	<0.019	0.363	0.437	0.426	
SS-28						0.011		<0.016	
SS-29						0.029			

Discharge measurement rating: E - excellent, G - good, F - fair, P - poor.

WELL NUMBER	CROSS REFERENCE NUMBER	LEGAL LOCATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	STATIC WATER LEVEL Feet below MP	Measuring Point	PHYSICAL PARAMETERS Water Temperature (C)	Field pH (S.U.)
DW-340	AMC #29	T05N R10W S36 CAC	01/17/85	1445	W 1403	BAILED	8.2	TOC	7.5	6.4
DW-340	AMC #29	T05N R10W S36 CAC	12/16/85	1645	W 3035	PUMPED	9.2	TOC	8.0	6.6
DW-341	AMC #81	T05N R10W S36 CAC	12/16/85	1715	W 3036	PUMPED	10.0	TOC	8.0	7.0
DW-401	AMC #28	T05N R10W S25 CCB	01/17/85	1530	W 1404	BAILED	6.3	TOC	7.0	6.5
DW-401	AMC #28	T05N R10W S25 CCB	12/17/85	0945	W 3037	PUMPED	6.7	TOC	6.0	6.5
DW-403	AMC #70	T05N R10W S24 CCC	01/17/85	1130	W 1401	BAILED	10.4	TOC	8.0	6.8
DW-403	AMC #70	T05N R10W S24 CCC	12/16/85	1345	W 3032	PUMPED	10.0	TOC	7.0	7.2
DW-404	AMC #71	T05N R10W S24 CCC	01/17/85	1230	W 1402	BAILED	12.1	TOC	7.5	7.4
DW-404	AMC #71	T05N R10W S24 CCC	12/16/85	1415	W 3033	PUMPED	12.8	TOC	7.0	7.1
DW-405		T05N R10W S24 AAA	01/07/85	1515	W 1364	PUMPED	17.1	TOC	9.0	7.2
DW-405		T05N R10W S24 AAA	02/28/85	0800	W 1572	PUMPED	16.7	TOC	8.0	7.2
DW-405		T05N R10W S24 AAA	04/24/85	0850	W 1834	PUMPED	19.7	TOC	10.0	7.0
DW-405		T05N R10W S24 AAA	12/17/85	1415	W 3041	PUMPED	20.5	TOC	10.0	7.3
DW-408		T05N R09W S20 BAB	01/07/85	1600	W 1365	PUMPED	NO SWL	NA	9.0	7.2
DW-411	AMC #61	T05N R10W S23 CDD	01/07/85	1420	W 1363	PUMPED	32.0	TOC	8.0	7.0
DW-412	AMC #80	T05N R10W S25 DBD	12/17/85	1200	W 3039	PUMPED	9.3	TOC	8.0	7.6
DW-414	AMC #78	T05N R10W S25 ABA	12/17/85	1315	W 3040	PUMPED	9.2	TOC	7.5	7.5
DW-415	AMC #77	T05N R10W S24 CCCD	12/16/85	1315	W 3034	PUMPED	13.0	TOC	7.0	8.0
DW-416	AMC #79	T05N R10W S26	12/17/85	1032	W 3038	PUMPED	7.2	TOC	6.0	6.9
WSP-1		T04N R10W S01 CBD	12/19/85	1500	W 3058	PUMPED	3.5	TOC	8.0	7.6
WSP-1		T04N R10W S01 CBD	01/09/86	0930	W 3114	PUMPED	3.8	TOC	10.0	6.8
WSP-1 BLK		T04N R10W S01 CBD	01/09/86	0940	W 3115	BLANK	NA	NA	12.0	7.7
WSP-1 DUP		T04N R10W S01 CBD	01/09/86	0945	W 3116	PUMPED	3.8	TOC	7.5	6.9
WSP-2A		T05N R09W S19 AA	12/19/85	1630	W 3060	PUMPED	2.0	TOC	6.0	7.1
WSP-2A		T05N R09W S19 AA	01/09/86	1200	W 3119	PUMPED	FROZEN	TOC	7.0	6.7
WSP-2B		T05N R09W S19 AA	12/19/85	1600	W 3059	PUMPED	4.9	TOC	5.5	6.6
WSP-2B		T05N R09W S19 AA	01/09/86	1215	W 3120	PUMPED	5.0	TOC	6.5	6.4
WSP-3A		T05N R09W S18 DDC	12/20/85	1000	W 3073	PUMPED	5.3	TOC	8.0	7.3
WSP-3A DUP		T05N R09W S18 DDC	12/20/85	1030	W 3074	PUMPED	5.3	TOC	8.0	7.3
WSP-3A		T05N R09W S18 DDC	01/09/86	1115	W 3118	PUMPED	5.4	TOC	9.0	6.8
WSP-3B		T05N R09W S18 DDC	12/20/85	0930	W 3072	PUMPED	5.0	TOC	7.0	7.3
WSP-3B		T05N R09W S18 DDC	01/09/86	1050	W 3117	PUMPED	5.3	TOC	8.0	6.8
WSP-4		T05N R09W S18 DBC	12/20/85	1130	W 3075	PUMPED	6.4	TOC	5.0	7.1
WSP-4 BLK		T05N R09W S18 DBC	01/09/86	1310	W 3122	BLANK	NA	NA	8.0	4.5
WSP-4		T05N R09W S18 DBC	01/09/86	1330	W 3123	PUMPED	6.7	TOC	7.0	5.9
WSP-4 DUP		T05N R09W S18 DBC	01/09/86	1335	W 3124	PUMPED	6.7	TOC	6.5	6.4
WSP-5		T05N R09W S18 DBC	12/20/85	1200	W 3076	PUMPED	6.9	TOC	5.0	7.0
WSP-5		T05N R09W S18 DBC	01/09/86	1300	W 3121	PUMPED	7.1	TOC	6.0	6.6

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.
Identifiers: TOC - Top of Casing, MP - Measuring Point, DUP - Duplicate sample, NA - Not applicable, Blk - Blank.

WELL NUMBER	SAMPLE DATE	SAMPLE TIME	PHYSICAL PARAMETERS (cont'd) Specific Conductance (umhos/cm)	Eh (mv)	Dissolved Oxygen (mg/l)	Total Dissolved Solids	Total Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	REMARKS
DW-340	01/17/85	1445	3370			3341	234	234	0	
DW-340	12/16/85	1645	2410	-40	1.2		198	198	0	
DW-341	12/16/85	1715	1820	+60	1.0		166	166	0	
DW-401	01/17/85	1530	3310			3151	220	220	0	
DW-401	12/17/85	0945	2460	-35	1.5		104	104	0	
DW-403	01/17/85	1130	2750			2453	331	331	0	
DW-403	12/16/85	1345	1480	+50	4.0		274	274	0	
DW-404	01/17/85	1230	1720			1224	217	217	0	
DW-404	12/16/85	1415	1470	+60	1.5		264	264	0	
DW-405	01/07/85	1515	1080			1001	195	195	0	
DW-405	02/28/85	0800	1140							
DW-405	04/24/85	0850	1190							
DW-405	12/17/85	1415	1090	+425	4.7		192	192		
DW-408	01/07/85	1600	398			292	143	143	0	
DW-411	01/07/85	1420	526			482	148	148	0	
DW-412	12/17/85	1200	625	+110	3.0		172	172	0	
DW-414	12/17/85	1315	1830	+140	6.0		240	240	0	
DW-415	12/16/85	1315	330	+120	2.3		164	164	0	
DW-416	12/17/85	1032	1840	+125	1.6		260	260	0	
WSP-1	12/19/85	1500	350	+120	5.5		140	140	0	
WSP-1	01/09/86	0930	344	+190	5.6		146	146	0	
WSP-1 BLK	01/09/86	0940	7.8	+185	6.6		2.0	2.0	0	
WSP-1 DUP	01/09/86	0945	353	+162	5.7		142	142	0	
WSP-2A	12/19/85	1630	1080	+15	0.9		188	188	0	
WSP-2A	01/09/86	1200	850	+90	1.3		188	188	0	
WSP-2B	12/19/85	1600	2120	-40	1.3		204	204	0	
WSP-2B	01/09/86	1215	1650	-20	2.0		200	200	0	
WSP-3A	12/20/85	1000	1830	+130	1.8		256	256	0	
WSP-3A DUP	12/20/85	1030	1800	+20	1.3		260	260	0	
WSP-3A	01/09/86	1115	1810	+90	1.5		260	260	0	
WSP-3B	12/20/85	0930	2110	+135	2.7		252	252	0	
WSP-3B	01/09/86	1050	2070	+160	1.1		256	256	0	
WSP-4	12/20/85	1130	705	+145	2.7		196	196	0	
WSP-4 BLK	01/09/86	1310	2.6	+250	5.8		2.0	2.0	0	
WSP-4	01/09/86	1330	680	+250	2.8		200	200	0	
WSP-4 DUP	01/09/86	1335	653	+222	2.8		200	200	0	
WSP-5	12/20/85	1200	1720	-50	2.0		204	204	0	
WSP-5	01/09/86	1300	1780	-130	1.8		208	208	0	

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated. N.D. = Not determined.

WELL NUMBER	SAMPLE DATE	SAMPLE TIME	CATION/ANION BALANCE Total Cations (meq/l)	Total Anions (meq/l)	Percent Difference	COMMON IONS: Calcium	Potassium	Magnesium	Sodium	Sulfate	Chloride	Flouride
DW-340	01/17/85	1445	50.6	47.4	6.5	737	12.2	143	18.4	2040	7.0	0.60
DW-340	12/16/85	1645	44.8	42.3	5.7	609	10.1	140	21.2	1830	8.7	1.2
DW-341	12/16/85	1715	31.2	8.7	112.8	440	6.30	98.4	20.2	2500	6.8	0.57
DW-401	01/17/85	1530	15.1	45.4	-100.2	193	10.3	39.8	13.2	1960	7.0	2.0
DW-401	12/17/85	0945	49.8	43.1	14.4	667	6.60	136	18.2	1960	7.6	3.2
DW-403	01/17/85	1130	26.4	38.5	-37.3	389	4.6	73.3	16.0	1520	6.3	0.30
DW-403	12/16/85	1345	29.5	28.5	3.4	431	3.88	87.2	12.2	1100	5.0	0.41
DW-404	01/17/85	1230	14.8	20.5	-32.3	214	3.2	44.7	7.6	766	6.5	0.40
DW-404	12/16/85	1415	26.8	27.1	-1.1	390	3.55	82.8	8.27	1040	6.0	0.56
DW-405	01/07/85	1515	14.6	14.1	3.5	206	5.1	42.0	15.3	482	6.5	0.50
DW-405	02/28/85	0800								500		
DW-405	04/24/85	0850								526		
DW-405	12/17/85	1415	12.2	14.5	-17.2	175	5.38	33.2	14.1	505	6.5	0.60
DW-408	01/07/85	1600	4.9	4.6	6.3	59.0	3.7	13.5	16.2	58	20.5	0.40
DW-411	01/07/85	1420	7.1	6.8	4.3	102	1.6	20.4	5.0	180	5.0	0.50
DW-412	12/17/85	1200	6.7	7.8	-15.2	81.2	5.82	22.0	14.7	195	9.8	1.4
DW-414	12/17/85	1315	26.8	27.2	-1.5	395	5.38	75.6	14.7	1070	5.7	0.58
DW-415	12/16/85	1315	4.1	4.4	-7.1	53.4	2.31	12.0	8.15	50	1.8	0.68
DW-416	12/17/85	1032	31.3	27.0	14.8	500	7.51	66.6	14.2	1040	5.0	0.63
WSP-1	12/19/85	1500	4.1	4.9	-17.8	41.7	2.69	7.30	31.9	83	12.0	1.3
WSP-1	01/09/86	0930	4.4	3.9	12.0	41.7	3.35	7.56	36.4	30	12.8	0.84
WSP-1 BLK	01/09/86	0940		0.1		<0.45	<0.51	<0.24	<0.070	1.4	0.10	<0.50
WSP-1 DUP	01/09/86	0945	4.3	3.8	12.3	42.3	3.45	7.66	34.2	29	12.5	0.80
WSP-2A	12/19/85	1630	14.5	13.8	4.9	195	4.71	41.6	28.3	469	10.4	0.59
WSP-2A	01/09/86	1200	13.3	13.6	-2.2	174	5.21	40.1	25.4	456	10.9	<0.50
WSP-2B	12/19/85	1600	36.2	35.3	2.5	449	12.4	106	54.3	1480	15.4	2.7
WSP-2B	01/09/86	1215	26.6	24.7	7.4	314	11.0	80.0	43.8	980	11.5	1.9
WSP-3A	12/20/85	1000	31.8	25.7	21.2	467	8.22	86.0	25.5	975	8.4	0.60
WSP-3A DUP	12/20/85	1030	32.9	26.7	20.8	486	7.00	90.3	22.8	1020	8.8	0.58
WSP-3A	01/09/86	1115	28.1	26.5	5.9	407	4.75	85.7	13.5	1010	9.0	<0.50
WSP-3B	12/20/85	0930	34.5	36.8	-6.5	471	8.43	92.9	70.2	1510	10.8	0.72
WSP-3B	01/09/86	1050	35.1	32.7	7.1	486	8.12	106	42.8	1320	2.1	0.63
WSP-4	12/20/85	1130	12.9	10.8	17.7	192	4.01	31.3	13.4	325	5.7	1.0
WSP-4 BLK	01/09/86	1310		0.1		<0.45	<0.45	<0.24	<0.90	1.4	0.50	<0.50
WSP-4	01/09/86	1330	10.1	9.4	7.2	141	4.03	29.1	12.6	252	5.5	0.54
WSP-4 DUP	01/09/86	1335	9.4	9.8	-4.2	130	4.13	27.3	12.8	271	6.0	0.52
WSP-5	12/20/85	1200	34.3	25.6	29.0	513	8.85	85.9	28.6	1020	11.4	1.6
WSP-5	01/09/86	1300	24.0	23.9	0.4	339	7.80	67.8	27.0	932	10.4	0.85

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

WELL NUMBER	SAMPLE DATE	SAMPLE TIME	Arsenic Dissolved	Cadmium Dissolved	Copper Dissolved	Iron Dissolved	Lead Dissolved	Zinc Dissolved
DW-340	01/17/85	1445	0.044	<0.00080	<0.040	22	0.025	0.070
DW-340	12/16/85	1645	0.0052	0.00020	<0.024	43.9	0.0023	0.035
DW-341	12/16/85	1715	<0.0023	0.00030	<0.011	0.026	0.0016	<0.015
DW-401	01/17/85	1530	0.021	<0.00080	<0.040	37	<0.0089	<0.027
DW-401	12/17/85	0945	0.029	0.00020	0.030	119	0.0027	0.247
DW-403	01/17/85	1130	<0.0065	<0.00080	<0.040	1.6	<0.0089	<0.027
DW-403	12/16/85	1345	<0.0023	0.00040	<0.024	3.34	<0.0018	<0.011
DW-404	01/17/85	1230	<0.0065	<0.00080	<0.040	0.59	<0.0089	<0.027
DW-404	12/16/85	1415	<0.0023	0.00040	<0.024	1.22	0.0034	<0.011
DW-405	01/07/85	1515	<0.0053	<0.00050	<0.040	<0.031	0.0010	<0.027
DW-405	02/28/85	0800	<0.0021	<0.00010	<0.027	<0.028	<0.0013	<0.010
DW-405	04/24/85	0850						
DW-405	12/17/85	1415	<0.0023	0.00030	<0.011	<0.025	0.0016	<0.015
DW-408	01/07/85	1600	<0.0053	<0.00050	<0.040	<0.031	<0.00050	<0.027
DW-411	01/07/85	1420	<0.0053	<0.00050	<0.040	0.29	0.00050	0.090
DW-412	12/17/85	1200	<0.0023	0.00030	<0.011	0.026	<0.0014	<0.015
DW-414	12/17/85	1315	<0.0023	0.016	<0.011	0.026	<0.0014	<0.015
DW-415	12/16/85	1315	<0.0023	0.00030	<0.024	<0.030	0.0029	<0.011
DW-416	12/17/85	1032	<0.0023	0.00030	<0.011	0.077	<0.0014	<0.015
WSP-1	12/19/85	1500	<0.0075	0.00070	<0.0090	<0.053	<0.0014	<0.011
WSP-1	01/09/86	0930	0.0047	0.00010	0.0090	<0.051	<0.0013	<0.0050
WSP-1 BLK	01/09/86	0940	<0.0016	0.00010	<0.0060	<0.051	<0.0013	0.010
WSP-1 DUP	01/09/86	0945	0.0043	0.00060	0.0090	<0.051	0.033	0.012
WSP-2A	12/19/85	1630	<0.0075	0.0013	<0.0090	<0.053	<0.0014	<0.011
WSP-2A	01/09/86	1200	<0.0042	0.00080	0.0080	0.062	<0.0018	0.015
WSP-2B	12/19/85	1600	0.165	0.0014	0.038	62.9	<0.0014	0.387
WSP-2B	01/09/86	1215	0.244	0.0014	0.016	59.7	<0.0018	0.246
WSP-3A	12/20/85	1000	<0.0061	0.00040	<0.0090	0.104	<0.0014	<0.011
WSP-3A DUP	12/20/85	1030	<0.0061	0.00050	<0.0060	0.128	0.0054	0.0050
WSP-3A	01/09/86	1115	<0.0042	0.00060	<0.0060	0.177	<0.0018	0.0080
WSP-3B	12/20/85	0930	<0.0075	0.00060	<0.0090	<0.053	0.0044	<0.011
WSP-3B	01/09/86	1050	<0.0042	0.00070	<0.0060	0.064	<0.0018	0.022
WSP-4	12/20/85	1130	<0.0061	0.0010	<0.0060	<0.053	0.019	0.017
WSP-4 BLK	01/09/86	1310	<0.0042	0.00060	<0.0060	<0.051	<0.0018	0.0060
WSP-4	01/09/86	1330	<0.0042	0.00080	<0.0060	<0.051	0.0027	0.019
WSP-4 DUP	01/09/86	1335	<0.0042	0.00080	<0.022	<0.063	0.0018	<0.015
WSP-5	12/20/85	1200	0.018	0.0019	<0.011	1.64	<0.0014	0.105
WSP-5	01/09/86	1300	0.027	0.00080	<0.011	1.48	<0.0018	0.047

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

METALS:

WELL NUMBER	SAMPLE DATE	SAMPLE TIME	Arsenic Total	Cadmium Total	Copper Total	Iron Total	Lead Total	Zinc Total
DW-340	01/17/85	1445						
DW-340	12/16/85	1645						
DW-341	12/16/85	1715						
DW-401	01/17/85	1530						
DW-401	12/17/85	0945						
DW-403	01/17/85	1130						
DW-403	12/16/85	1345						
DW-404	01/17/85	1230						
DW-404	12/16/85	1415						
DW-405	01/07/85	1515						
DW-405	02/28/85	0800						
DW-405	04/24/85	0850						
DW-405	12/17/85	1415						
DW-408	01/07/85	1600						
DW-411	01/07/85	1420						
DW-412	12/17/85	1200						
DW-414	12/17/85	1315						
DW-415	12/16/85	1315						
DW-416	12/17/85	1032						
WSP-1	12/19/85	1500						
WSP-1	01/09/86	0930						
WSP-1 BLK	01/09/86	0940						
WSP-1 DUP	01/09/86	0945						
WSP-2A	12/19/85	1630						
WSP-2A	01/09/86	1200						
WSP-2B	12/19/85	1600						
WSP-2B	01/09/86	1215						
WSP-3A	12/20/85	1000						
WSP-3A DUP	12/20/85	1030						
WSP-3A	01/09/86	1115						
WSP-3B	12/20/85	0930						
WSP-3B	01/09/86	1050						
WSP-4	12/20/85	1130						
WSP-4 BLK	01/09/86	1310						
WSP-4	01/09/86	1330						
WSP-4 DUP	01/09/86	1335						
WSP-5	12/20/85	1200						
WSP-5	01/09/86	1300						

NOTE: Units are mg/l unless otherwise noted. * indicates data not validated.

DRAFT

ATTACHMENT IV

LITHOLOGIC AND COMPLETION LOGS
AND WELL DEVELOPMENT LOGS

MultiTech

Stiller and Associates, Inc.
Consulting Hydrologists – Geologists – Engineers

MONITORING WELL LOG

State: Montana County: Silver Bow Project: SBC CERCLA Hole Name or Number: WSP-1

Legal Location: T 4N R 10W Sec 1 Tract CBD Descriptive Location: 200 yards S. of upper pH shack, Warm Springs Ponds

Recorded by: Braun Date Hole Started: 12/05/85 1000 hrs. Date Hole Completed: 12/06/85 1430 hrs. Driller: Frosty Drilling Company: O'Keefe

Drill Method: Cable Tool Drilling Fluids Used: Butte city water Pilot Hole Diameter: 5.5" Reamed Hole Diameter: 7.5" Drive Shoe

Total Depth Drilled: 79' Total Depth Reamed: N/A Total Depth Cased Below G.S.: 79' Diameter and Type of Casing: 4" Flush-Threaded PVC

Weight or Gage of Casing: Sch. 40 Interval Perforated or Screened Below G.S.: 69'-79' Target Aquifer: SBC Alluvium Packer Type and Depth Below G.S.: N/A

DURING INSTALLATION WAS:	YES	NO
Well Developed?		x
Well Test Pumped?		x
Water Samples Taken?		x
Material Samples Taken?	x	
E-Logs?		x

Method Perforated or Screened

	No casing in hole.
	Open bottom only.
	Slotted with Mill's Knife.
	Slotted with a torch.
	Screened by pulling casing.
	Saw cut.
x	Other (specify) 0.030" factory slot

Static Water Level: 1.5' Date: 12/06/85 @ 1430 hrs.

Measuring Point Description/Elevation: Top of steel well protector/4888.66 MP Height Above (+/-) or Below G.S.: +3.0'

Well Annulus Completion Description: Colorado Silica Sand (8-12 mesh) 79'-59'; Volclay bentonite pellets 59'-56'; Pioneer Concrete Inc. pea gravel 56'-3'; bentonite pellets 3'-1'; concrete grout surface seal; 5' steel well protector with lock

Remarks: Artesian conditions encountered.

DRILLING AND LITHOLOGIC LOG

From	To	Geological, Drilling, and Water Conditions and Sampling
0'	3'	Soil; dark brown; silty, sandy, loam.
3'	6'	Sand: silty; buff to light brown; fine to coarse sand; subrounded; fair to poor sorted; fair porosity; quartz, mafics, feldspar, volcanics, rock fragments; split spoon sample 2'-4'; abundant red-orange mineralized staining; some dark green-brown stained sand.
6'	10'	Gravel: silty; light green to brown; clasts up to 1" diameter; slightly calcareous; subangular to angular; poor sorting; fair to poor porosity; some mineralized green and maroon staining; lithology as above; seepage @ 7'; split spoon sample 6'-8'.
10'	24'	Sand and gravel; Sand (80%), gravel (20%); light brown to light gray; clasts up to 1/2" diameter; subangular to subrounded; poor to fair sorting; mafics, quartz, feldspar, volcanic rock fragments; silt matrix at 15'; yield approximately 0.5 gpm.

24'	34'	Clay; silty; mediumbrown to red-brown; sandy zones; yield = 0.5 gpm; increase sand content @ 28', yield = 2 gpm at 25'.
34'	42'	Sand; silty; light brown to light gray; very fine to coarse grained; clay matrix; poor sorting; subangular; poor porosity; lithology as above; occasional thin clay beds as above.
42'	48'	Sand and fine grained material; silty clay (50%), silty sand (50%), lithology as above.
48'	52'	Sand; silty; (80%) (20%); light brown; subangular; poor sorting; poor-fair porosity; @ 50' yield =7 gpm.
52'	68'	Sand and gravel; silty sand (60%), gravel (40%); light gray to light green to brown; lithology as above.
68'	79'	Sand and gravel; Sand (70%), gravel (30%); light gray, light green, tan to black; subangular clasts up to 1/2" diameter; fair sorting; good porosity; chert, quartz, volcanic rock fragments, feldspar, occasional limestone; medium grus; 30 gpm yield.

Field Parameters Measured While Drilling

Depth	S.C.	Temp.	SO_4 mg/L
10'	350	8 C	
15'	500	8 C	80
25'	400	8 C	60
30'	360	7 C	
35'	380	7 C	
48'	380	8 C	less than 50
56'	370	9 C	

S.C. is uncorrected for temperature and cell factor.
SO_4 is measured with Hach kit.

Stiller and Associates, Inc.
Consulting Hydrologists - Geologists - Engineers

MONITORING WELL LOG

Hole Name
State: Montana County: Deer Lodge Project: SBC CERCLA or Number: WSP-2A Deep and WSP-2B Shallow
Legal Descriptive
Location: T 5N R 9W Sec 19 Tract AA Location: Approximately 300 yards N. of Warm Springs Pond embankment
Date Hole 1500 hrs. Date Hole 1200 hrs. Drilling
Recorded by: Braun and Grotbo Started: 12/06/85 Completed: 12/10/85 Driller: Frosty Company: O'Keefe
Drill Drilling Pilot Hole Reamed Hole
Method: Cable Tool Fluids Used: Water Diameter: 5.5" Diameter: 7.5" Drive Shoe
Total Depth Total Depth Total Depth Diameter and
Drilled: 68' Reamed: N/A Cased Below G.S.: 68' Type of Casing: 2" Flush Joint PVC
Weight or Interval Perforated Target Packer Type and
Gage of Casing: Sch. 40 or Screened Below G.S.: 62'-67' and 5'-15' Aquifer: CFR Alluvium Depth Below G.S.: N/A

DURING INSTALLATION WAS:	YES	NO
Well Developed?		x
Well Test Pumped?		x
Water Samples Taken?		x
Material Samples Taken?	x	
E-Log?		x

Method Perforated or Screened

	No casing in hole.
	Open bottom only.
	Slotted with Mill's Knife.
	Slotted with a torch.
	Screened by pulling casing.
	Saw cut.
x	Other (specify) 0.010" factory slot

Static Water Level: WSP-2A 2.82', WSP-2B 4.71 Date: 12/11/85 @ 1430 hrs.
Measuring Point MP Height Above (+/-)
Description/Elevation: Top of steel well protector/4802.31 or Below G.S.: +1.5'
Well Annulus
Completion Description: Dual completion; Colorado Silica Sand (20-40 mesh) 68'-60'; Volclay bentonite pellets 60'-55'; Pioneer Concrete Inc. pea gravel 55'-23'; bentonite pellets 23'-20' (20-40 mesh) sand pack 20'-4'; bentonite pellets 4'-2'; concrete grout steel well protector with lock

Remarks:

DRILLING AND LITHOLOGIC LOG

From	To	Geological, Drilling, and Water Conditions and Sampling
0'	1'	Topsoil.
1'	5'	Tailings; rust, gray, tan; silty sand texture; mineralization on grains gives blue-green stain; sandier in lower part; split spoon sample 2'-4'.
5'	12'	Gravel; tan to black; clasts up to 2" diameter; subrounded; poor sorting; silty matrix; mineralization gives rust, blue-green, black stains; seepage @ 6'; split spoon sample 5'-6' and 8'-9'.
12'	18'	Sand; varicolored, primarily gray tone; medium to moderately well sorted; subround to subangular; quartz rich; produces 3-5 gpm.
18'	26'	Gravel and sand; grayish; fine sand to small gravel; poorly sorted; subrounded to subangular; occasional medium gravel clasts; produces 15-20 gpm; heaving sand @ 25'.

26'	32'	Sand; brown to light brown; very fine to fine grained; poorly sorted; subangular; quartz rich; fine grained lens from 25-27'; micaceous throughout.
32'	34'	Sand; sand (70%), gravel (10%), silt/clay (10%); light brown to buff; poorly sorted; subangular; produces approximately 4-5 gpm; occasional fine grained lenses; tight at 34', fine grained lense evident.
34'	38'	Silty sand; sand (70%), silt/clay (30%); buff to brown; fine grained; poorly sorted; relatively low porosity, produces approximately 1 gpm.
38'	46'	Sand and gravel; sand (70%), gravel (20%), fine grained (10%); light brown to buff; poor to fair sorting; subangular to subrounded; gravels to 3/4"; quartz rich; sand size predominantly medium; produces 5-10 gpm.
46'	62'	Silty sand; sand (50%), gravel (5%), silt/clay (40%); light brown; poorly sorted; subangular; fairly tight, produces less than 1 gpm; sandier (moderately sorted, medium grained), from 52 to 53', approximately 50% fine grained content from 53-60'.
62'	69'	Sand; sand (85%), silt (10%), gravel (5%); varicolored; poorly sorted; subrounded to subangular; very fine to coarse; occasional 1/4" to 1/2" gravel; produces approximately 20 gpm.

It appears that water quality improves with depth at this site. Lower perforated piezometer completed in first decent water-bearing zone. This water appeared different from that overlying the two water zones; the new zone and the previous two are separated by an approximate 15' fine-grained zone.

Field Parameters Measured While Drilling

Depth	S.C.	Temp. (C)	pH
15'	1000	2	
21'	800	3	
25'	410	2	6.9
28'	720	4	
34'	890	5	6.9
38'	710	8	7.5
42'	700	6	
49'	700	7	7.6
53'	800	9	7.6
55'	800	9	
63'	710	9	6.7
68'	610	7	6.8

S.C. is unadjusted for temperature and cell factor.

Stiller and Associates, Inc.
Consulting Hydrologists - Geologists - Engineers

MONITORING WELL LOG

State: Montana County: Deer Lodge Project: SBC CERCLA Hole Name or Number: WSP-3A Deep and WSP-3B Shallow

Legal Location: T 5N R 9W Sec 18 Tract DCC Descriptive Location: Near W. end of Pond 1 dike, app. 100 yards S. of dike

Recorded by: Grotbo Date Hole Started: 12/10/85 1300 hrs. Date Hole Completed: 12/13/85 1100 hrs. Driller: Frosty Drilling Company: O'Keefe

Drill Method: Cable Tool Drilling Fluids Used: Butte City Water Pilot Hole Diameter: 5.5" tool diameter Reamed Hole Diameter: 7.5" Drive Shoe

Total Depth Drilled: 75' Total Depth Reamed: N/A Total Depth Cased Below G.S.: 74' Diameter and Type of Casing: 2" Flush Joint PVC

Weight or Gage of Casing: Sch. 40 Interval Perforated or Screened Below G.S.: 69'-74', 32'-42' Target Aquifer: CFR Alluvium Packer Type and Depth Below G.S.: N/A

DURING INSTALLATION WAS:	YES	NO
Well Developed?		x
Well Test Pumped?		x
Water Samples Taken?		x
Material Samples Taken?	x	
E-Logs?		x

Method Perforated or Screened

	No casing in hole.
	Open bottom only.
	Slotted with Mill's Knife.
	Slotted with a torch.
	Screened by pulling casing.
	Saw cut.
x	Other (specify) 0.010" factory slot

Static Water Level: 5.59 (A)- 5.02 (B) Date: 12/13/85

Measuring Point Description/Elevation: Top of steel well protector/4801.93 MP Height Above (+/-) or Below G.S.: +2.0'

Well Annulus Completion Description: Dual completion; Colorado Silica Sand (20-40 mesh) 74'-67'; Volclay bentonite pellets 67'-62'; S&N Inc. gravel 62'-43'; bentonite 3'-2'; concrete grout steel well protector with lock.

Remarks: Had to use jacks to pull casing, much sandier lithology then WSP2

DRILLING AND LITHOLOGIC LOG

From	To	Geological, Drilling, and Water Conditions and Sampling
0'	2.5'	Topsoil; dark brown to black; silt loam; occasional lense of gray clayey silt; abundant root fragments; no evidence of enrichment.
2.5'	4'	Silt; gray; clayey; occasional oxidized zones; gravel lense @3.5'(medium size, subrounded, probable H_2O @ 3.5'); large gravels at 3.5'-4', interbedded with gray silt, silt is darker gray with depth; gravel bed has oxididation staining; H_2O @ 4'; Cored 2'-4', 5-6'.
4'	5.5'	Silt; gray; clayey.
5.5'	15'	Sand and gravel; gravel (40%), sand (50%); gravel is small to large; subrounded; poorly sorted; mostly quartz, mica, purple nodule - unknown origin, some pyrite evident; sand is fine to coarse; varicolored; moderate-well sorted; subangular; primarily gray silt to very fine sand matrix @ 10-11'; makes 2-3 gpm @ 11'; gravel is much larger than at WSP-2, probably some cobbles mixed in.

15'	20'	Sand; sand (80%), fines (20%); fairly clean mud; well sorted; subangular; very fine to fine grained; first good water bearing zone; sand is quartz rich.
20'	32'	Silty sand; sand (50%), fines (45%), gravel (5%); light to dark brown; sand is very fine grained to fine grained; moderate to well sorted; subangular; silty, produces little water; occasional gravel lens (medium), produces 1-2 gpm.
32'	38'	Sand; sand (80%), gravel (10%), fines (10%); varicolored; poorly sorted; subangular medium sized gravels to 1/2"; quartz and mafic rich; produces approximately 10 gpm @ 32'; yellowish tinge (iron) to this water and sample 34'-36'; sand is coarsening with depth to coarse size.
38'	45'	Silty sand; sand (60%), fines (30%), gravel (10%); light yellowish brown, similar to above; tighter (approximately 3-4 gpm); iron tinge.
45'	65'	Sand; sand (80%), fines (20%); light brown; quartz rich; fine-grained to medium grained; subangular; makes 15-20 gpm; more sand @ 48', most of water from 48'-52'; increased percent of sand with depth; fine grained lenses evident 53-55', seperates 2 H_2O zones; makes 20 gpm @ 60'.
65'	69'	Silty sand; sand (60%), fine grained (40%); light brown; poorly sorted; fine to medium; subangular; silty matrix - tight zone produce less than 1 gpm (confining layer).
69'	75'	Sand; sand (85%), fine-grained (15%); brown; medium to coarse; poorly sorted; subangular to subrounded; produces approximately 20-25 gpm.

Field Parameters Measured While Drilling

Depth	S.C.	Temp.	pH
6'	750	1	
11'	900	9.5	6.9
14'	980	12.5	
15'	1120	11.5	6.8
23'	1180	6	6.5
32'	1350	8	
36'	1380	8	
40'	1380	8	
45'	1310	8	
48'	1210	5	
56'	1390	11	
60'	1290	11	
65'	1200	7	
69'	1180	9	
75'	1100	5	

Stiller and Associates, Inc.
Consulting Hydrologists - Geologists - Engineers

MONITORING WELL LOG

State: Montana County: Deer Lodge Project: SBC CERCLA Hole Name or Number: WSP-4

Legal Location: T 5N R 9W Sec 18 Tract DBC Descriptive Location: Near AMC weather station, adjacent to CFR

Recorded by: Grotbo Date Hole Started: 12/16/85 Date Hole Completed: 12/16/85 Driller: Frosty Drilling Company: O'Keefe

Drill Method: Cable Tool Drilling Fluids Used: Butte City Water Pilot Hole Diameter: 5.5" tool diameter Reamed Hole Diameter: 7.5" Drive Shoe

Total Depth Drilled: 38' Total Depth Reamed: N/A Total Depth Cased Below G.S.: 38' Diameter and Type of Casing: 4" Flush Threaded PVC

Weight or Gage of Casing: Sch. 40 Interval Perforated or Screened Below G.S.: 33'-38' Target Aquifer: CFR Alluvium Packer Type and Depth Below G.S.: N/A

DURING INSTALLATION WAS:	YES	NO
Well Developed?	x	
Well Test Pumped?		x
Water Samples Taken?	x	
Material Samples Taken?	x	
E-Logs?		x

Method Perforated or Screened

- ____ No casing in hole.
- ____ Open bottom only.
- ____ Slotted with Mill's Knife.
- ____ Slotted with a torch.
- ____ Screened by pulling casing.
- ____ Saw cut.
- x Other (specify) 0.03" factory slot

Static Water Level: 6.4 Date: 12/19/85

Measuring Point Description/Elevation: Top of steel well protector/4793.51 MP Height Above (+/-) or Below G.S.: +2.0'

Well Annulus Completion Description: Colorado Silica Sand (8-12 mesh) 38'-29'; Volclay bentonite pellets 29'-26'; gravel 26'-3'; bentonite plug 3'-1'; concrete grout steel well protector with lock.

Remarks:

DRILLING AND LITHOLOGIC LOG

From	To	Geological, Drilling, and Water Conditions and Sampling
0'	3.5'	Sand; rust brown to light brown; very fine to fine grained; oxidized zones throughout; root fragments common; pyrite throughout; possibly tailings (?); cored 2.5'-4.5'; silty @ 3-3.5.
3.5'	8.0'	Silt/clay; black; slimy; H_2O @ approximately 4'; organic-rich; root fragments to approximately 6'; cored 6-8'; soft, forms ribbon; reduced environment; oxidized zones 3.5'-6' with abundant pyrite.
8.0'	9.0'	Sand; black to dark brown; silty; fine-medium grained; subangular; quartz rich.
9.0'	10.0'	Silty sand and gravel; sand (30%), gravel (20%), fines (50%); black silty/clay matrix; sand is medium; poorly sorted; subangular; gravel is small to medium; subrounded; poorly sorted; tight.

10.0'	18'	Gravel and sand; gravel (50%), sand (30%), fines (20%); poorly sorted; subrounded; medium sand to large gravels (3-4"); black silty matrix; produces less than 5 gpm; gray matrix @ 15' - lost black coloring.
18'	26'	Sand; sand (70%), gravel (10%), fines (20%); varicolored; poorly sorted; subangular; gravel is mostly small, quartz rich; produces approximately 10 gpm @ 20'; becoming sandier and lighter brown @ approximately 25'.
26'	38'	Sand and Silt; sand (50%), silt/clay (50%); light brown; clayey relatively tight-possible confining layer; sand is fine to medium; subangular; moderate to well sorted; appears lensey; drills easy; produces approximately 3-5 gpm.

Field Parameters Measured While Drilling

Depth	S.C.	Temp. (C)
12'	820	7
15'	820	7
20'	980	8
25'	820	7.5
28'	730	7
35'	600	7
38'	430	8

S.C. is not adjusted for temperature and cell factor.

Stiller and Associates, Inc.
Consulting Hydrologists - Geologists - Engineers

MONITORING WELL LOG

State: Montana County: Deer Lodge Project: SBC CERCLA Hole Name or Number: WSP-5

Legal Location: T 5N R 9W Sec 18 Tract DBC Descriptive Location: Near AMC weather station, adjacent to CFR

Recorded by: Grotbo Date Hole Started: 12/16/85 Date Hole Completed: 12/17/85 Driller: Frosty Drilling Company: O'Keefe

Drill Method: Cable Tool Drilling Fluids Used: Butte City Water Pilot Hole Diameter: 5.5" tool diameter Reamed Hole Diameter: 7.5" Drive Shoe

Total Depth Drilled: 20' Total Depth Reamed: N/A Total Depth Cased Below G.S.: 20' Diameter and Type of Casing: 4" Flush threaded PVC

Weight or Gage of Casing: Sch. 40 Interval Perforated or Screened Below G.S.: 15'-20' Target Aquifer: CFR Alluvium Packer Type and Depth Below G.S.: N/A

DURING INSTALLATION WAS:	YES	NO
Well Developed?	x	
Well Test Pumped?		x
Water Samples Taken?	x	
Material Samples Taken?	x	
E-Logs?		x

Method Perforated or Screened

- ____ No casing in hole.
- ____ Open bottom only.
- ____ Slotted with Mill's Knife.
- ____ Slotted with a torch.
- ____ Screened by pulling casing.
- ____ Saw cut.
- x Other (specify) 0.03" factory slot

Static Water Level: 6.7 Date: 12/17/85

Measuring Point Description/Elevation: Top of steel well protector/4793.52 MP Height Above (+/-) or Below G.S.: +1.7'

Well Annulus Completion Description: Colorado Silica Sand (8-12 mesh) 20'-12'; Volclay bentonite pellets in-8'; gravel 8'-4'; bentonite plug 4'-2'; concrete grout steel well protector with lock.

Remarks:

DRILLING AND LITHOLOGIC LOG

From	To	Geological, Drilling, and Water Conditions and Sampling
0'		Same as WSP-4 to 20'

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No. WSP-1

WELL DATA

PROJECT: **Name** SBC CERCLA **State** Montana **County** Silver Bow

Location: T 4N R 10W **Sec.** 1 **Tract** CBD

Well Location (Narrative Desc.) Near upper pH shack

Well Depth (Ft.) 79' **Diameter (In.)** 4" **Perf. Interval** 69'-79'

Static Water Level 1.9' **Stick up** +2.45 **M.P. Desc.** Top of steel

Meas. Date/Time 12/19/85 1245 hrs. **Aquifer** Silver Bow Creek Alluvium

DEVELOPMENT DATA

Date 12/19/85 **Start** 1250 **Finished** 1315 **Total Development Time** 25 min

Est. Yield at Start > 20 gpm **Est. Yield at End** > 20 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____
Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry Air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: **At Start** Clear, then orangish-tan silt

At End Clear

Static Water Level
After Development : **Time After Dev. Ended** 1316 **SWL** 40'-30' < 1 min

Trend Very fast

Operator Pat Dunlavy **Water Quality Samples Taken:** **No**

Remarks: Water frozen at surface, approximately 5", able to chip loose

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No. WSP-02A (Deep)

WELL DATA

PROJECT: Name SBC CERCLA State Montana County Deer Lodge

Location: T 5N R 9W Sec. 19 Tract AA

Well Location(Narrative Desc.) Down gradient of Pond #1, eastern well

Well Depth (Ft.) 68' Diameter (In.) 2" Perf. Interval 62'-67'

Static Water Level 2.74 Stick up +1.38' M.P. Desc. Top of steel

Meas. Date/Time 12/19/85 1020 hrs. Aquifer Clark Fork River Allivium

DEVELOPMENT DATA

Date 12/19/85 Start 1030 Finished 1045 Total Development Time 15 min

Est. Yield at Start > 10 gpm Est. Yield at End > 10 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____
Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry Air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

WaterColor & Turbidity: At Start Clear 10 seconds, then very turbid

(Orangish-Brown)

At End Clear

Static Water Level
After Development : Time After Dev. Ended 1045 SWL 10' Trend Very fast

Operator Pat Dunlavy Water Quality Samples Taken: No

Remarks:

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No WSP-2B (Shallow)

WELL DATA

PROJECT: Name SBC CERCLA State Montana County Deer Lodge

Location: T 5N R 9W Sec. 19 Tract AA

Well Location (Narrative Desc.) Down gradient of Pond #1 , Eastern well

Well Depth (Ft.) 15' Diameter (In.) 2" Perf. Interval 5'-15'

Static Water Level 4.65 Stick up +1.38 M.P. Desc. Top of steel

Meas. Date/Time 12/19/85 1045 hrs. Aquifer Clark Fork River Alluvium

DEVELOPMENT DATA

Date 12/19/85 Start 1050 Finished 1121 Total Development Time 31 min.

Est. Yield at Start approximately 3 gpm Est. Yield at End approximately 3 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____ Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: At Start Very turbid, dark brown to black

At End Slightly silty

Static Water Level
After Development : Time After Dev. Ended 1122 SWL 7' Trend Fair, not real fast

Operator Pat Dunlavy Water Quality Samples Taken: No

Remarks: Didn't clean up real well, took a lot of work.

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No. WSP-3A (Deep)

WELL DATA

PROJECT: Name SBC CERCLA State Montana County Deer Lodge

Location: T 5N R 9W Sec. 18 Tract DCC

Well Location (Narrative Desc.) Downgradient of Pond #1, Western well. Deeper of the dual completed wells.

Well Depth (Ft.) 74' Diameter (In.) 2" Perf. Interval 69'-74'

Static Water Level 5.35 Stick up +1.7' M.P. Desc. Top of steel

Meas. Date/Time 12/19/85 0900 hrs. Aquifer Clark Fork River Alluvium

DEVELOPMENT DATA

Date 12/19/85 Start 0950 Finished 1010 Total Development Time 20 min

Est. Yield at Start >5 gpm Est. Yield at End >5 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____ Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: At Start Very turbid, (tan) At End Clear

Static Water Level
After Development : Time After Dev. Ended 1011 SWL 20' Trend Very quick recovery

Operator Pat Dunlavy Water Quality Samples Taken: No

Remarks:

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA **Well No.** WSP-3B(Shallow)

WELL DATA

PROJECT: **Name** SBC CERCLA **State** Montana **County** Deer Lodge

Location: T 5N R 9W **Sec.** 18 **Tract** DCC

Well Location (Narrative Desc.) Downgradient of Pond #1, shallow of the dual completion.

Well Depth (Ft.) 42' **Diameter (In.)** 2" **Perf. Interval** 32'-42'

Static Water Level 5.14 **Stick up** +1.7' **M.P. Desc.** Top of steel

Meas. Date/Time 12/19/85 0400 hrs. **Aquifer** Clark Fork River Alluvium

DEVELOPMENT DATA

Date 12/19/85 **Start** 0905 **Finished** 0945 **Total Development Time** 40 min

Est. Yield at Start > 10 gpm **Est. Yield at End** > 10 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____
Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: **At Start** Very turbid, (tan) **At End** Clear

Static Water Level
After Development : Time After Dev. Ended 01011 **SWL** 5.10'

Trend Very quick (apparently)

Operator Pat Dunlavy **Water Quality Samples Taken:** No

Remarks:

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No. WSP-4

WELL DATA

PROJECT: Name SBC CERCLA State Montana County Deer Lodge

Location: T 5N R 9W Sec. 18 Tract DBC

Well Location (Narrative Desc.) Near old AMC gaging station

Well Depth (Ft.) 38' **Diameter In.)** 4" **Perf. Interval** 33'-38'

Static Water Level 6.39 **Stick up** +1.95 **M.P. Desc.** Top of steel

Meas. Date/Time 12/19/85 1130 hrs. **Aquifer** Clark Fork River Alluvium

DEVELOPMENT DATA

Date 12/19/85 **Start** 1140 **Finished** 1230 **Total Development Time** 40 min

Est. Yield at Start <3 gpm **Est. Yield at End** <3 gpm

Equipment: Bailer Sand Pump Compressor Surge Block Drilling _____
Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: **At Start** First blast clear, then very silty, orangish **At End** Slightly silty

Static Water Level After Development : **Time After Dev. Ended** 1231 **SWL** 33' **Trend** Very slow

Operator Pat Dunlavy **Water Quality Samples Taken:** No pH & DO

Remarks: Blows dry very easily, slow recovery, tight. Didn't clean up very well. Not enough H_2O.

Stiller and Associates, Inc. Helena, Montana

WELL DEVELOPMENT DATA Well No. WSP-5

WELL DATA

PROJECT: Name SBC CERCLA State Montana **County** Deer Lodge

Location: T 5N R 9W Sec. 18 Tract DBC

Well Location (Narrative Desc.) Near old AMC gaging station

Well Depth (Ft.) 20' **Diameter In.)** 4" **Perf. Interval** 15'-20'

Static Water Level 6.95 **Stick up** +1.7 **M.P. Desc.** Top of steel

Meas. Date/Time 12/19/85 1130 hrs. **Aquifer** Clark Fork River Alluvium

DEVELOPMENT DATA

Date 12/19/85 **Start** 1155 **Finished** 1235 **Total Development Time** 40 min

Est. Yield at Start <1 gpm **Est. Yield at End** <1 gpm

Equipment: Bailer Sand Pump Compressor **Surge Block Drilling** _____
Other (Specify)

Desc. of Equipment 100 cfm Smith compressor (Dry air)

Dev. Additives Used N/A

Desc. of Packer & Surface Seals N/A

Water Color & Turbidity: At Start Very turbid, orangish **At End** Slightly silty, orangish

Static Water Level After Development : Time After Dev. Ended 1236 **SWL** 15' **Trend** Very slow

Operator Pat Dunlavy **Water Quality Samples Taken: No pH & DO**

Remarks: Didn't clean up well. Not enough H_2O

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ATTACHMENT V

WATER LEVEL DATA

ATTACHMENT V
WATER LEVEL DATA

WELL NUMBER	WELL OWNER	DATE	SWL BELOW MP (FT.)	SWL ELEVATION (FT. AMSL)	
DW-340	AMC	01/17/85	8.3	4884.6	
		02/28/85	8.2	4884.7	
		03/28/85	8.9	4884.0	
		07/10/85	9.0	4883.9	
		12/16/85	9.2	4883.7	
DW-341	AMC	12/16/85	10.0	4882.3	
DW-401	AMC	01/17/85	6.3	4885.8	
		02/28/85	6.5	4885.6	
		07/10/85	6.8	4885.3	
		12/17/85	6.7	4885.4	
DW-403	AMC	01/17/85	10.4	4864.6	(1)
		03/01/85	10.6	4864.4	
		03/28/85	10.3	4864.7	
		07/10/85	8.1	4866.9	
		12/16/85	10.0	4865.0	
DW-404	AMC	01/17/85	12.1	4862.9	(1)
		03/01/85	13.4	4861.6	
		03/28/85	13.2	4861.8	
		07/10/85	12.4	4862.6	
		12/16/85	12.8	4862.2	
DW-405	Warm Springs State Hospital	01/07/85	17.1	4802.9	(1)
		02/28/85	16.7	4803.3	
		03/27/85	20.9	4799.1	
		04/24/85	19.7	4800.3	
		12/17/85	20.5	4799.5	

ATTACHMENT V
WATER LEVEL DATA
(Continued)

WELL NUMBER	WELL OWNER	DATE	SWL BELOW MP (FT.)	SWL ELEVATION (FT. AMSL)
DW-407	L. Beck	12/19/84	68.3	4781.7 (1)
		01/08/85	68.2	4781.8
		02/28/85	68.4	4781.6
		03/27/85	Frozen	------
DW-408	R. Peterson	01/07/85	Unobtainable	---
DW-411	R. Johnson	01/07/85	32.0	4850.0 (1)
		02/28/85	32.5	4849.5
		03/27/85	32.5	4849.5
DW-412	AMC	12/17/85	9.3	4859.4
DW-414	AMC	12/17/85	9.2	4841.5
DW-415	AMC	12/16/85	13.0	4862.0 (1)
DW-416	AMC	12/17/85	7.2	4881.8 (1)
WSP-1	MDHES	12/19/85	3.5	4885.2
		01/09/85	3.8	4884.9

ATTACHMENT V
WATER LEVEL DATA
(Continued)

WELL NUMBER	WELL OWNER	DATE	SWL BELOW MP (FT.)	SWL ELEVATION (FT. AMSL)
WSP-2A	MDHES	12/11/85	2.8	4799.5
		12/17/85	2.8	4799.5
		01/09/85	Frozen	---
WSP-2B	MDHES	12/11/85	4.8	4797.5
		12/19/85	4.9	4797.4
		01/09/86	5.0	4797.3
WSP-3A	MDHES	12/17/85	5.2	4796.7
		12/20/85	5.3	4796.6
		01/09/86	5.4	4796.5
WSP-3B	MDHES	12/17/85	5.0	4796.9
		12/20/85	5.0	4796.9
		01/09/86	5.3	4796.6
WSP-4	MDHES	12/17/85	6.3	4787.2
		12/20/85	6.4	4787.1
		01/09/86	6.7	4786.8
WSP-5	MDHES	12/17/85	6.7	4786.8
		12/20/85	6.9	4786.6
		01/09/86	7.1	4786.4

(1) Elevation based on datum obtained from topographic map; survey data was unavailable.

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ATTACHMENT VI

GEOLOGIC MATERIALS SAMPLES RESULTS

GEOLOGIC MATERIALS COLLECTED DURING PHASE II WELL DRILLING.
CONCENTRATIONS IN mg/kg

Well #	Depth (ft)	Sulfur		Soluble (Olsen)		Plant Available (Halvorson)	(Ammonium Oxalate)	Total (Nitric + Peroxide Digest)						Water Soluble
		Total	Pyritic	P	As	As	Mo	Cd	Cu	Fe	Mn	Pb	Zn	Nitrate-
WSP-1	2	1750	1820	11.3	7.24	145	<0.24	46	1200	33100	1410	274	3120	169
WSP-1	4	54	60	0.949	2.38	<23	<0.23	6	25	10600	90	17	16	29.8
WSP-1	6	283	330	2.10	2.78	<23	<0.24	7	77	13500	170	35	194	75.8
WSP-2	2	13900	1980	12.1	62.3	552	---	12	3860	17500	540	492	1950	---
WSP-2	4	388	60	0.35	<1.3	<23	<0.24	5	39	14000	1020	19	49	<0.24
WSP-2	6	1130	920	1.32	2.15	<23	0.98	7	86	15000	230	28	61	180
WSP-2	33-34	105	<50	1.26	0.163	<23	0.33	9	36	21300	410	26	41	145
WSP-3	2-4	1150	150	1.01	0.352	<23	<0.23	3	20	11900	750	23	39	102
WSP-3	5-6	402	70	1.98	4.05	40.8	0.88	4	20	8900	580	11	99	63.6
WSP-3	32	<50	<50	0.881	0.229	51.8	----	6	28	16000	130	18	22	194
WSP-4	2-3	1050	657	10.6	14.8	101	0.84	11	720	24300	780	117	466	62.6
WSP-4	6-8	1390	1400	6.09	2.47	<23	0.44	10	116	22800	290	41	144	157

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ATTACHMENT VII

MASS BALANCE DATA

MASS BALANCE DATA
WATER QUALITY AND INSTANTANEOUS FLOW INPUT DATA

Parameters are in the order of the output form

"SS-20","06/05/85","","382","113#","0.224","0.022","0.108","0.039","0.056","0.026","",""
"SS-23","06/04/85","2.12","2240","1490","0.512","<0.012","0.117","0.136","0.012","<0.015","",""
"SS-24","06/04/85","1.15","2460","1370","0.325","0.018","0.156","0.037","0.013","<0.015","",""
"SS-26","06/05/85","","416","119","0.461","0.022","0.019","0.023","0.053","0.016","",""
"SS-27","06/04/85","0.40","1430","707","0.586","0.033","0.021","<0.012","0.0073","<0.015","",""
"SS-19","06/04/85","112","333","62","0.100","0.030","0.589","0.308","0.198","0.059","0.57","0.16"
"SS-21","06/05/85","56.6","398","112","0.502","0.060","0.166","0.057","0.080","0.030","0.18","0.050"
"SS-22","06/05/85","72.0","380","102","0.232","0.047","0.113","0.055","0.058","0.033","0.17","0.050"
"PS-11A","06/05/85","6.54","446","116#","0.028","0.018","0.021","<0.012","0.0098","<0.015","0.080","0.030"
"PS-12","06/05/85","134","385","116","0.180","0.047","0.098","0.065","0.052","0.051","0.13","0.030"

"SS-20","06/19/85","","358","94","0.129","0.021","0.036","<0.0060","0.030","0.020","",""
"SS-23","06/18/85","0.72","2740","1450","0.246","<0.0090","0.063","0.061","<0.024","<0.0090","",""
"SS-24","06/18/85","0.64","2440","1440","0.287","<0.0090","1.68","0.019","0.055","<0.0090","",""
"SS-26","06/19/85","","426","126","0.224","0.052","0.048","<0.0060","0.022","<0.021","",""
"SS-27","06/18/85","1.0","1560","853","0.660","0.028","0.023","<0.0060","<0.012","<0.0090","",""
"SS-19","06/18/85","45.7","385","74","1.40","0.026","0.378","0.038","0.138","0.038","0.24","0.10"
"SS-21","06/19/85","11.4","365","105","0.412","0.035","0.051","<0.0060","0.029","<0.021","0.090","0.030"
"SS-22","06/19/85","9.94","393","113","0.344","<0.021","0.084","<0.0060","0.044","0.026","0.10","0.020"
"PS-11A","06/19/85","6.34","459","116","0.085","<0.021","0.023","<0.0060","0.021","<0.021","0.070","0.030"
"PS-12","06/19/85","25.4","403","124","0.121","0.021","0.024","<0.0060","0.016","<0.021","0.070","0.11"

"SS-20","07/09/85","POND3","393","96","0.134","0.016","0.045","0.008","0.039","<0.021","",""
"SS-23","07/09/85","0.475","2485","1415","0.298","<0.014","0.077","0.058","0.025","<0.012","",""
"SS-24","07/09/85","0.50","2550","1510","0.258","0.015","0.861","0.026","0.042","<0.012","",""
"SS-26","07/09/85","POND2","443","125","0.203","0.042","0.039","<0.0060","0.039","<0.021","",""
"SS-27","07/09/85","","","","","","","","","","",""
"SS-19 ","07-09-85","39.2 ","442 ","73 ","0.860","0.016","0.480 ","0.062 ","0.228 ","0.042 ","0.34","0.14"
"SS-21 ","07-09-85","5.37 ","466","113 ","0.550","<0.0060","0.049 ","<0.0050","0.051","<0.015","0.070","0.020"
"SS-22 ","07-09-85","4.53","437","105","0.138","<0.0060","0.027","<0.0050","0.026","<0.015","0.060","0.050"
"PS-11A","07-09-85","6.45","485 ","112","0.082","<0.0060","0.0080","<0.0050","0.022","<0.015","0.040","0.030"
"PS-12 ","07-09-85","11.5 ","437","152","0.142","0.0090 ","0.033 ","<0.0050","0.031","<0.015","0.14 ","0.12 "

"SS-20","07/24/85","POND 3","428","98","0.139","0.011","0.054","0.010","0.048","<0.023","",""
"SS-23","07/24/85","0.23","2230","1380","0.350","<0.019","0.091","0.054","0.027","<0.016","",""
"SS-24","07/24/85","0.36","2660","1580","0.229","0.021","0.042","0.033","0.030","<0.016","",""
"SS-26","07/24/85","POND 2","460","124","0.182","0.032","0.030","<0.0060","0.056","<0.023","",""
"SS-27","07/24/85","","","","","","","","","","",""
"SS-19","07/23/85","28.2","428","68","0.435","0.058","0.256","0.054","0.097","0.044","0.35","0.21"
"SS-21","07/24/85","5.8","427","103","0.558","0.038","0.054","0.012","0.120","<0.016","0.10","0.050"
"SS-22","07/24/85","6.0","498","109","0.104","<0.0050","0.028","<0.0060","0.051","<0.023","0.055","0.030"
"PS-11A","07/24/85","7.4","457","103","0.131","0.0060","0.019","<0.0060","0.048","<0.023","0.72","0.020"
"PS-12","07/24/85","10.0","451","151","0.112","<0.019","0.026","0.0090","0.024","<0.016","0.36","0.33"

"SS-20","08/06/85","","439","104","0.142","<0.013","0.049","<0.013","0.031","<0.022","","
"SS-23","08/06/85","0.19","2315","1435","","","0.100","0.062","0.027","<0.017","",""
"SS-24","08/06/85","0.38","2625","1545","","","0.038","0.028","0.018","<0.017","",""

"SS-26","08/06/85","","462","119","0.124","<0.023","0.020","<0.011","0.033","<0.022","",""
"SS-27","08/06/85","","","","","","","","","",""
"SS-19 ","08-06-85","47.3 ","361 ","59 ","0.802 ","0.023 ","0.484 ","0.273 ","0.191","0.048","0.33","0.18"
"SS-21 ","08-06-85","14.5","410","121","0.382","0.027","0.054","0.0050","0.047","<0.015","0.050","0.040"
"SS-22 ","08-06-85","12.7 ","402 ","126","0.172","0.324","0.043","<0.0050","0.035","<0.015","0.060","0.030"
"PS-11A","08-06-85","7.62 ","455","131","0.049 ","0.055 ","0.0060 ","0.066 ","0.012 ","0.023 ","0.050","0.030"
"PS-12 ","08-06-85","34.0 ","471 ","141","0.147","0.018","0.026","<0.0050","0.022","<0.015","0.19","0.16"

"SS-20","08/29/85","","450","110","0.145","<0.015","0.044","<0.017","0.014 ","<0.021","","
"SS-23","08/29/85","0.15","2400","1490","","","0.110","0.069","0.027","<0.019","",""
"SS-24","08/29/85","0.41","2590","1510","","","0.035","0.024","0.006","<0.019","",""
"SS-26","08/29/85","","464","114","0.067","<0.015","0.010","<0.017","0.010","<0.021","",""
"SS-27","08/29/85","","","","","","","","","",""
"SS-19","08/28/85","29.1","393","81","0.497","0.038","0.414","0.063","0.126","0.052","0.42","0.22"
"SS-21","08/29/85","5.19","412","139","0.549","<0.015","0.072","<0.017","0.031","<0.019","0.070","<0.026"
"SS-22","08/29/85","5.42","399","118","0.126","0.016","0.047","<0.017","0.017","<0.021","0.060","0.060"
"PS-11A","08/29/85","6.26","773","118","0.025","<0.015","0.0090","<0.017","<0.0050","<0.021","0.040","0.030"
"PS-12","08/29/85","14.6","433","143","0.157","<0.015","0.038","<0.017","0.012","<0.019","0.14","0.10"

"SS-20","09/09/85","","450","110","0.145","<0.015","0.044","<0.017","0.014 ","<0.021","","
"SS-23","09/09/85","0.15","2400","1490","","","0.110","0.069","0.027","<0.019","",""
"SS-24","09/09/85","0.41","2590","1510","","","0.035","0.024","0.006","<0.019","",""
"SS-26","09/09/85","","464","114","0.067","<0.015","0.010","<0.017","0.010","<0.021","",""
"SS-27","09/09/85","","","","","","","","","",""
"SS-19","09-11-85","49.6","702","76 ","0.894","0.028 ","0.642","0.229 ","0.237","0.056 ","0.32 ","0.12 "
"SS-21","09-11-85","17.1","402","123","0.455","0.0060","0.098","0.0070","0.039","<0.015","0.16","0.030"
"SS-22","09-11-85","15.6","396","120","0.290","<0.0060","0.079","0.0070","0.044","<0.015","0.060","0.030"
"PS-11A","09-11-85","6.77","443","121","0.040","<0.0060","0.0040","0.0060","<0.0080","<0.015","0.080","0.080"
"PS-12 ","09-11-85","32.0","421","154","0.107","<0.0060","0.027","<0.0050","0.016","<0.015","0.010","0.050"

DAILY STAFF GAGE READINGS AND DISCHARGES AT POND 2 DISCHARGE

"06-01-85",1.16,99.77559267920515
"06-02-85",1.28,118.0035339270871
"06-03-85",2.15,285.6255569047207
"06-04-85",2.35,332.3844388183061
"06-05-85",2.2,297.0400759469485
"06-06-85",1.97,246.078326658695
"06-07-85",1.85,221.0802121716479
"06-08-85",1.48,151.135601694561
"06-09-85",1.42,140.8416667032361
"06-10-85",1.41,139.1552596621332
"06-11-85",1.24,111.7874105164956
"06-12-85",1.28,118.0035339270871
"06-13-85",1.24,111.7874105164956
"06-14-85",1.13,95.41744971141452
"06-15-85",.89,63.51713006336286
"06-16-85",.85,58.72868409116381
"06-17-85",.82,55.2397159660859
"06-18-85",.78,50.72604015099842
"06-19-85",.74,46.37256937299208
"06-20-85",.7,42.18181564341649
"06-21-85",.7,42.18181564341649
"06-22-85",.72,44.25669162039776
"06-23-85",.72,44.25669162039776
"06-24-85",.69,41.15986965263164
"06-25-85",.69,41.15986965263164
"06-26-85",.71,43.21410476527035
"06-27-85",.73,45.309523244704
"06-28-85",.78,50.72604015099842
"06-29-85",.7,42.18181564341649
"06-30-85",.69,41.15986965263164
"07-01-85",.7,42.18181564341649
"07-02-85",.68,40.1482970581128
"07-03-85",.69,41.15986965263164
"07-04-85",.64,36.20674317734756
"07-05-85",1.16,99.77559267920515
"07-06-85",.58,30.61390312500362
"07-07-85",.56,28.83646972082397
"07-08-85",.55,27.96429673203511
"07-09-85",.56,28.83646972082397
"07-10-85",.51,24.58719634130648
"07-11-85",.5,23.77114070244897
"07-12-85",.5,23.77114070244897
"07-13-85",.5,23.77114070244897
"07-14-85",.5,23.77114070244897
"07-15-85",.5,23.77114070244897
"07-16-85",.48,22.17335204968776
"07-17-85",.44,19.11704761438295
"07-18-85",.48,22.17335204968776
"07-19-85",.49,22.96650639230302

DAILY STAFF GAGE READINGS AND DISCHARGES
AT POND 2 DISCHARGE (Continued)

"07-20-85",.48,22.17335204968776
"07-21-85",.49,22.96650639230302
"07-22-85",.48,22.17335204968776
"07-23-85",.48,22.17335204968776
"07-24-85",.47,21.39176090389492
"07-25-85",.42,17.6597348734194 4
"07-26-85",.44,19.11704761438295
"07-27-85",.44,19.11704761438295
"07-28-85",.42,17.6597348734194 4
"07-29-85",.4,16.25050974731266
"07-30-85",.42,17.6597348734194 4
"07-31-85",.45,19.86352924010043
"08-01-85",.45,19.86352924010043
"08-02-85",.46,20.62179726846807
"08-03-85",.63,35.24776771203597
"08-04-85",.8,52.96299760727379
"08-05-85",.8,52.96299760727379
"08-06-85",.86,59.91123991603945
"08-07-85",.85,58.72868409116381
"08-08-85",.78,50.72604015099842
"08-09-85",.78,50.72604015099842
"08-10-85",.64,36.20674317734756
"08-11-85",.81,54.0964103185479
"08-12-85",.97,73.55430268978125
"08-13-85",1.02,80.13359333157314
"08-14-85",.98,74.85150686397901
"08-15-85",.94,69.71914989216 02
"08-16-85",.88,62.30550451678482
"08-17-85",.86,59.91123991603945
"08-18-85",.8,52.96299760727379
"08-19-85",.74,46.37256937299208
"08-20-85",.72,44.25669162039776
"08-21-85",.66,38.15648391425202
"08-22-85",.65,37.17632281105216
"08-23-85",.61,33.36187519131727
"08-24-85",.63,35.24776771203597
"08-25-85",.61,33.36187519131727
"08-26-85",.58,30.61390312500362
"08-27-85",.56,28.83646972082397
"08-28-85",.56,28.83646972082397
"08-29-85",.54,27.10321782951542
"08-30-85",.49,22.96650639230302
"08-31-85",.52,25.41460332060751
"09-01-85",.5,23.77114070244897
"09-02-85",.48,22.17335204968776
"09-03-85",.5,23.77114070244897
"09-04-85",.49,22.96650639230302
"09-05-85",.48,22.17335204968776
"09-06-85",.5,23.77114070244897
"09-07-85",.58,30.61390312500362
"09-08-85",.75,47.4457808243169
"09-09-85",.84,57.55588122601603
"09-10-85",.9,64.73840642462892

DAILY STAFF GAGE READINGS AND DISCHARGES
AT POND 2 DISCHARGE (Continued)

"09-11-85",.94,69.7191498921602
"09-12-85",1.1,91.1400921206714
"09-13-85",1.4,137.4772663457916
"09-14-85",1.3,121.1635761082016
"09-15-85",1.2,105.7109761225802

ELEVATION-AREA-CAPACITY RATING FOR POND 3

Elevation	Acres	Acre/Feet Water	Total Acre/Feet Water
4851	8.13	4.07	4.07
4852	20.34	12.21	16.28
4853	34.13	27.24	43.52
4854	49.83	41.98	85.5
4855	71.25	60.54	146.04
4856	85.66	78.46	224.50
4857	100.53	93.10	317.60
4858	136.64	118.59	436.19
4859	172.57	154.61	590.80
4860	182.34	177.46	768.26
4861	246.96	214.65	982.91
4862	310.67	278.82	1261.73
4863	337.11	323.89	1585.62
4864	404.45	370.78	1956.4
4865	460.24	432.35	2388.75
4866	574.25	517.25	2906.00
4867	637.81	606.03	3512.03
4870	927.20	782.51	4294.53

Based on CASHELL ENGINEERS bathymetric maps of Warm Springs ponds 2 and 3 and Horizons Inc. Topographic map of the Anaconda Smelter Site. Acreages determined with planimeter.

ELEVATION-AREA-CAPACITY RATING FOR POND 2

Elevation	Acres	Acre/Feet Water	Total Acre/Feet Water
4826	1.98	.99	.99
4827	5.55	3.77	4.76
4828	14.34	9.95	14.71
4829	24.15	17.05	31.76
4830	68.45	46.30	78.06
4831	198.38	133.42	211.48
4832	237.5	217.94	429.42
4835	442.21	330.08	759.50

DAILY STAFF GAGE READINGS FOR POND 3,
POND 2, POND 2 DISCHARGE, AND POND 1

"06-01-85",1.06,1.66,1.16,0.56
"06-02-85",1.51,1.65,1.28,0.64
"06-03-85",1.24,1.80,2.15,0.65
"06-04-85",1.11,1.69,2.35,0.70
"06-05-85",1.10,1.60,2.20,0.72
"06-06-85",1.06,1.53,1.97,0.72
"06-07-85",0.99,1.45,1.85,0.70
"06-08-85",0.98,1.45,1.48,0.72
"06-09-85",1.00,1.40,1.42,0.74
"06-10-85",0.98,1.42,1.41,0.73
"06-11-85",0.97,1.44,1.24,0.75
"06-12-85",0.96,1.44,1.28,0.78
"06-13-85",0.93,1.42,1.24,0.78
"06-14-85",0.92,1.42,1.13,0.79
"06-15-85",0.95,1.32,0.89,0.67
"06-16-85",0.95,1.30,0.85,0.68
"06-17-85",0.91,1.27,0.82,0.59
"06-18-85",0.90,1.25,0.78,0.60
"06-19-85",0.88,1.25,0.74,0.58
"06-20-85",0.90,1.20,0.70,0.57
"06-21-85",0.90,1.22,0.70,0.57
"06-22-85",0.90,1.22,0.72,0.56
"06-23-85",0.90,1.22,0.72,0.58
"06-24-85",0.85,1.20,0.69,0.54
"06-25-85",0.86,1.19,0.69,0.57
"06-26-85",0.88,1.19,0.71,0.56
"06-27-85",0.90,1.19,0.73,0.57
"06-28-85",0.89,1.18,0.78,0.56
"06-29-85",0.85,1.20,0.70,0.53
"06-30-85",0.84,1.18,0.69,0.63
"07-01-85",0.84,1.19,0.70,0.57
"07-02-85",0.85,1.18,0.68,0.55
"07-03-85",0.87,1.18,0.69,0.57
"07-04-85",0.84,1.18,0.64,0.54
"07-05-85",0.82,0.60,1.16,0.52
"07-06-85",0.80,1.16,0.58,0.50
"07-07-85",0.80,1.16,0.56,0.50
"07-08-85",0.80,1.14,0.55,0.50
"07-09-85",0.82,1.12,0.56,0.49
"07-10-85",0.76,1.09,0.51,0.49
"07-11-85",0.78,1.10,0.50,0.48
"07-12-85",0.80,1.09,0.50,0.48
"07-13-85",0.76,1.10,0.50,0.48
"07-14-85",0.76,1.08,0.50,0.48
"07-15-85",0.77,1.08,0.50,0.47
"07-16-85",0.76,1.06,0.48,0.47
"07-17-85",0.77,1.03,0.44,0.43
"07-18-85",0.79,1.04,0.48,0.45
"07-19-85",0.79,1.06,0.49,0.45
"07-20-85",0.78,1.03,0.48,0.40

DAILY STAFF GAGE READINGS FOR POND 3, POND 2, POND 2 DISCHARGE, AND POND 1 (Continued)

"07-21-85",0.78,1.03,0.49,0.40
"07-22-85",0.78,1.04,0.48,0.40
"07-23-85",0.78,1.03,0.48,0.40
"07-24-85",0.77,1.03,0.47,0.38
"07-25-85",0.77,1.02,0.42,0.38
"07-26-85",0.77,1.03,0.44,0.38
"07-27-85",0.77,1.02,0.44,0.38
"07-28-85",0.76,1.01,0.42,0.38
"07-29-85",0.74,1.00,0.40,0.33
"07-30-85",0.75,1.02,0.42,0.34
"07-31-85",0.76,1.02,0.45,0.38
"08-01-85",0.78,1.02,0.45,0.38
"08-02-85",0.80,1.02,0.46,0.36
"08-03-85",0.91,1.19,0.63,0.52
"08-04-85",0.96,1.25,0.80,0.51
"08-05-85",0.94,1.24,0.80,0.52
"08-06-85",0.96,1.26,0.86,0.53
"08-07-85",0.95,1.26,0.85,0.53
"08-08-85",0.92,1.22,0.78,0.52
"08-09-85",0.89,1.22,0.78,0.52
"08-10-85",0.82,1.16,0.64,0.51
"08-11-85",0.97,1.25,0.81,0.63
"08-12-85",0.98,1.29,0.97,0.66
"08-13-85",1.00,1.34,1.02,0.73
"08-14-85",0.97,1.31,0.98,0.85
"08-15-85",0.96,1.30,0.94,0.76
"08-16-85",0.94,1.28,0.88,0.78
"08-17-85",0.94,1.26,0.86,0.78
"08-18-85",0.90,1.22,0.80,0.80
"08-19-85",0.86,1.21,0.74,0.78
"08-20-85",0.85,1.18,0.72,0.78
"08-21-85",0.85,1.17,0.66,0.79
"08-22-85",0.84,1.16,0.65,0.78
"08-23-85",0.86,1.16,0.61,0.78
"08-24-85",0.86,1.16,0.63,0.79
"08-25-85",0.85,1.16,0.61,0.78
"08-26-85",0.79,1.13,0.58,0.77
"08-27-85",0.79,1.14,0.56,0.78
"08-28-85",0.78,1.12,0.56,0.76
"08-29-85",0.77,1.09,0.54,0.76
"08-30-85",0.76,1.06,0.49,0.73
"08-31-85",0.76,1.04,0.52,0.75
"09-01-85",0.76,1.02,0.50,0.75
"09-02-85",0.76,1.02,0.48,0.75
"09-03-85",0.76,1.02,0.50,0.76
"09-04-85",0.78,1.03,0.49,0.76
"09-05-85",0.78,1.03,0.48,0.76
"09-06-85",0.79,1.02,0.50,0.77
"09-07-85",0.85,1.09,0.58,0.88
"09-08-85",0.95,1.15,0.75,0.92
"09-09-85",0.96,1.24,0.84,0.94
"09-10-85",0.96,1.28,0.90,0.98
"09-11-85",0.98,1.30,0.94,1.02

DAILY STAFF GAGE READINGS FOR POND 3, POND 2, POND 2 DISCHARGE, AND POND 1 (Continued)

"09-12-85",1.02,1.36,1.10,1.02
"09-13-85",1.00,1.36,1.40,1.01
"09-14-85",1.00,1.35,1.30,1.00
"09-15-85",0.98,1.30,1.20,1.00

MASS BALANCE STUDY
DAILY EVAPORATION AND EVAPOTRANSPIRATION IN POND AREA
(ACRE-FEET)

Date	Pond 3	Pond 2	Wildlife Ponds	Marsh	Grain
06-01-85	12.48	4.44	0.99	1.86	0.68
06-02-85	13.30	4.44	0.99	1.86	0.68
06-03-85	12.80	4.58	0.99	1.86	0.68
06-04-85	12.57	4.47	0.99	1.86	0.68
06-05-85	12.55	4.40	0.99	1.86	0.68
06-06-85	12.48	4.35	0.99	1.86	0.68
06-07-85	12.35	4.29	0.99	1.86	0.68
06-08-85	12.33	4.29	0.99	1.86	0.68
06-09-85	12.37	4.25	0.99	1.86	0.68
06-10-85	12.33	4.27	0.99	1.86	0.68
06-11-85	12.31	4.28	0.99	1.86	0.68
06-12-85	12.29	4.28	0.99	1.86	0.68
06-13-85	12.24	4.27	0.99	1.86	0.68
06-14-85	12.22	4.27	0.99	1.86	0.68
06-15-85	12.27	4.19	0.99	1.86	0.68
06-16-85	12.27	4.18	0.99	1.86	0.68
06-17-85	12.20	4.15	0.99	1.86	0.68
06-18-85	12.18	4.14	0.99	1.86	0.68
06-19-85	12.15	4.14	0.99	1.86	0.68
06-20-85	16.38	5.52	1.33	2.37	0.86
06-21-85	16.38	5.54	1.33	2.37	0.86
06-22-85	16.38	5.54	1.33	2.37	0.86
06-23-85	16.38	5.54	1.33	2.37	0.86
06-24-85	16.26	5.52	1.33	2.37	0.86
06-25-85	16.28	5.51	1.33	2.37	0.86
06-26-85	16.33	5.51	1.33	2.37	0.86
06-27-85	13.79	4.64	1.12	2.06	0.75
06-28-85	13.77	4.63	1.12	2.06	0.75
06-29-85	13.69	4.64	1.12	2.06	0.75
06-30-85	13.68	4.63	1.12	2.06	0.75
07-01-85	13.68	4.64	1.12	2.26	0.88
07-02-85	13.69	4.63	1.12	2.26	0.88
07-03-85	13.73	4.63	1.12	2.26	0.88
07-04-85	14.57	4.93	1.19	2.38	0.92
07-05-85	14.54	4.12	1.19	2.38	0.92
07-06-85	14.51	4.91	1.19	2.38	0.92
07-07-85	14.51	4.91	1.19	2.38	0.92
07-08-85	14.51	4.89	1.19	2.38	0.92
07-09-85	14.54	4.88	1.19	2.38	0.92
07-10-85	12.28	4.12	1.01	2.08	0.81
07-11-85	12.30	4.13	1.01	2.08	0.81
07-12-85	12.33	4.12	1.01	2.08	0.81
07-13-85	12.28	4.13	1.01	2.08	0.81
07-14-85	12.28	4.11	1.01	2.08	0.81
07-15-85	12.29	4.11	1.01	2.08	0.81
07-16-85	12.28	4.10	1.01	2.08	0.81

MASS BALANCE STUDY
DAILY EVAPORATION AND EVAPOTRANSPIRATION IN POND AREA
(ACRE-FEET) (Continued)

Date	Pond 3	Pond 2	Wildlife Ponds	Marsh	Grain
07-17-85	12.62	4.18	1.04	2.13	0.83
07-18-85	12.65	4.19	1.04	2.13	0.83
07-19-85	12.65	4.21	1.04	2.13	0.83
07-20-85	12.64	4.18	1.04	2.13	0.83
07-21-85	12.64	4.18	1.04	2.13	0.83
07-22-85	12.64	4.19	1.04	2.13	0.83
07-23-85	12.64	4.18	1.04	2.13	0.83
07-24-85	12.62	4.18	1.04	2.13	0.83
07-25-85	12.62	4.18	1.04	2.13	0.83
07-26-85	10.15	3.36	0.83	1.80	0.00
07-27-85	10.15	3.36	0.83	1.80	0.00
07-28-85	10.14	3.35	0.83	1.80	0.00
07-29-85	10.12	3.35	0.83	1.80	0.00
07-30-85	10.13	3.36	0.83	1.80	0.00
07-31-85	10.14	3.36	0.83	1.80	0.00
08-01-85	10.16	3.36	0.83	1.63	0.00
08-02-85	2.74	0.90	0.22	0.43	0.00
08-03-85	2.78	0.93	0.22	0.43	0.00
08-04-85	2.80	0.94	0.22	0.43	0.00
08-05-85	2.79	0.94	0.22	0.43	0.00
08-06-85	2.80	0.94	0.22	0.43	0.00
08-07-85	4.95	1.67	0.40	0.86	0.00
08-08-85	4.93	1.66	0.40	0.86	0.00
08-09-85	4.90	1.66	0.40	0.86	0.00
08-10-85	4.86	1.64	0.40	0.86	0.00
08-11-85	4.96	1.67	0.40	0.86	0.00
08-12-85	4.97	1.68	0.40	0.86	0.00
08-13-85	4.98	1.70	0.40	0.86	0.00
08-14-85	4.96	1.69	0.40	0.86	0.00
08-15-85	4.95	1.68	0.40	0.86	0.00
08-16-85	4.94	1.68	0.40	0.86	0.00
08-17-85	4.94	1.67	0.40	0.86	0.00
08-18-85	4.91	1.66	0.40	0.86	0.00
08-19-85	4.88	1.66	0.40	0.86	0.00
08-20-85	9.97	3.37	0.81	1.59	0.00
08-21-85	9.97	3.36	0.81	1.59	0.00
08-22-85	9.96	3.36	0.81	1.59	0.00
08-23-85	9.99	3.36	0.81	1.59	0.00
08-24-85	9.99	3.36	0.81	1.59	0.00
08-25-85	9.97	3.36	0.81	1.59	0.00
08-26-85	9.91	3.34	0.81	1.59	0.00
08-27-85	9.91	3.35	0.81	1.59	0.00
08-28-85	9.90	3.33	0.81	1.59	0.00
08-29-85	9.04	3.03	0.74	1.49	0.00
08-30-85	9.03	3.01	0.74	1.49	0.00
08-31-85	9.03	3.00	0.74	1.49	0.00
09-01-85	9.03	2.99	0.74	1.44	0.00
09-02-85	9.03	2.99	0.74	1.44	0.00
09-03-85	9.03	2.99	0.74	1.44	0.00
09-04-85	9.05	3.00	0.74	1.44	0.00
09-05-85	2.99	0.99	0.25	0.55	0.00
09-06-85	3.00	0.99	0.25	0.55	0.00
09-07-85	3.01	1.00	0.25	0.55	0.00

MASS BALANCE STUDY
DAILY EVAPORATION AND EVAPOTRNASPIRATION IN POND AREA
(ACRE-FEET) (Continued)

Date	Pond 3	Pond 2	Wildlife Ponds	Marsh	Grain
09-08-85	3.06	1.01	0.25	0.55	0.00
09-09-85	3.06	1.03	0.25	0.55	0.00
09-10-85	3.06	1.04	0.25	0.55	0.00
09-11-85	3.07	1.04	0.25	0.55	0.00
09-12-85	3.09	1.05	0.25	0.55	0.00
09-13-85	3.31	1.13	0.26	0.76	0.00
09-14-85	3.31	1.13	0.26	0.76	0.00
09-15-85	3.30	1.12	0.26	0.76	0.00

FLOW &MASS BALANCE FOR 06/01/85 TO 06/15/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	2658.37	63.07	34.21	2531.63	194.58	-39.12	-74.10	266.71	38.11	0.00	-162.15	0.37	-5.88
SC	1607.41	256.55	152.83	1769.82	157.58	-152.09	-56.81	0.00	0.00	0.00	298.29	-0.68	14.79
SO4	450.98	257.15	128.26	803.54	61.76	-7.24	-23.70	0.00	0.00	0.00	2.03	-0.00	0.24
T-FE	727.38	98.36	30.43	1246.87	14.91	-904.87	-86.86	0.00	0.00	0.00	576.13	-1.31	68.09
D-FE	218.22	2.07	1.69	325.57	9.58	-34.44	-3.11	0.00	0.00	0.00	-75.64	0.17	-34.07
T-ZN	4284.29	20.19	14.60	678.85	11.18	-411.28	-4.69	0.00	0.00	0.00	4045.03	-9.18	93.65
D-ZN	2240.34	23.47	3.46	450.26	6.39	-176.66	-4.22	0.00	0.00	0.00	1991.50	-4.52	87.84
T-CU	1440.22	2.07	1.22	360.21	5.22	-258.88	-11.67	0.00	0.00	0.00	1348.63	-3.06	93.43
D-CU	429.16	2.59	1.40	353.28	0.00	-2.78	-3.24	0.00	0.00	0.00	85.90	-0.19	19.83
T-P4	4146.09	0.00	0.00	900.52	42.59	0.00	0.00	0.00	0.00	0.00	3202.98	-7.27	77.25
O-P4	1163.81	0.00	0.00	207.81	15.97	0.00	0.00	0.00	0.00	0.00	940.03	-2.13	80.77

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 06/16/85 TO 06/30/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	1270.13	21.42	19.04	688.86	188.63	-32.18	-30.51	309.62	43.97	0.00	142.21	0.37	10.35
SC	887.93	106.58	84.36	504.08	157.21	86.10	-23.62	0.00	0.00	0.00	355.10	0.92	32.91
SO4	257.17	34.99	73.02	233.72	59.87	4.79	-10.41	0.00	0.00	0.00	129.22	0.33	30.97
T-FE	4865.46	14.42	14.95	228.07	43.87	-178.38	-21.87	0.00	0.00	0.00	4823.14	12.48	98.54
D-FE	90.36	0.53	0.47	39.58	10.84	-34.10	-3.81	0.00	0.00	0.00	78.84	0.20	86.31
T-ZN	1313.67	3.69	87.53	45.24	11.87	-98.21	-3.50	0.00	0.00	0.00	1449.50	3.75	103.17
D-ZN	132.06	3.58	0.99	11.31	3.10	-57.04	-0.74	0.00	0.00	0.00	180.01	0.47	131.75
T-CU	479.59	1.41	2.87	30.16	10.84	-2.42	-2.46	0.00	0.00	0.00	447.75	1.16	92.54
D-CU	132.06	0.53	0.47	39.58	10.84	-1.76	-1.75	0.00	0.00	0.00	86.15	0.22	64.75
T-P4	934.08	0.00	0.00	131.94	36.13	0.00	0.00	0.00	0.00	0.00	666.01	1.72	79.85
O-P4	347.53	0.00	0.00	207.33	15.48	0.00	0.00	0.00	0.00	0.00	124.72	0.32	35.89

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 07/01/85 TO 07/15/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	1002.92	14.13	14.88	519.17	191.90	-42.42	-21.79	285.84	46.57	0.00	52.67	0.37	5.10
SC	804.92	63.77	68.88	411.96	169.00	147.05	-17.07	0.00	0.00	0.00	226.63	1.58	24.17
SO4	200.33	54.72	61.46	215.92	58.81	4.09	-7.49	0.00	0.00	0.00	45.18	0.32	14.27
T-FE	2360.00	11.52	10.50	201.72	43.06	22.66	-12.98	0.00	0.00	0.00	2127.57	14.87	89.32
D-FE	43.91	0.54	0.61	12.78	3.15	-40.07	-2.91	0.00	0.00	0.00	72.10	0.50	160.02
T-ZN	1317.21	2.98	35.05	46.88	4.20	63.45	-2.69	0.00	0.00	0.00	1243.39	8.69	91.75
D-ZN	170.14	2.24	1.06	7.10	2.63	14.30	-0.36	0.00	0.00	0.00	149.77	1.05	86.35
T-CU	625.67	0.97	1.71	44.04	11.55	64.15	-1.64	0.00	0.00	0.00	510.25	3.57	81.21
D-CU	115.26	0.46	0.49	21.31	7.88	-2.44	-1.25	0.00	0.00	0.00	90.71	0.63	78.06
T-P4	933.02	0.00	0.00	198.88	21.00	0.00	0.00	0.00	0.00	0.00	713.14	4.98	76.43
O-P4	384.19	0.00	0.00	170.47	13.75	0.00	0.00	0.00	0.00	0.00	197.97	1.38	51.53

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 07/16/85 TO 07/31/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	1145.01	7.30	11.42	324.64	234.84	-6.06	-13.08	264.08	40.27	0.00	319.05	0.37	27.42
SC	989.86	29.56	55.18	265.85	194.88	122.77	-10.64	0.00	0.00	0.00	401.75	0.46	41.22
SO4	213.04	27.56	49.39	134.13	66.19	29.07	-4.49	0.00	0.00	0.00	65.10	0.08	22.45
T-FE	1362.85	6.99	7.16	99.49	84.18	24.89	-7.40	0.00	0.00	0.00	1175.83	1.36	85.39
D-FE	181.71	0.39	0.66	16.88	3.86	-14.51	-1.44	0.00	0.00	0.00	177.97	0.21	97.38
T-ZN	802.04	1.92	1.31	23.09	12.21	19.66	-1.35	0.00	0.00	0.00	751.56	0.87	93.34
D-ZN	169.18	1.08	1.03	7.99	3.86	21.32	-0.18	0.00	0.00	0.00	138.30	0.16	80.74
T-CU	303.90	0.54	0.94	21.32	30.84	-24.34	-1.75	0.00	0.00	0.00	279.30	0.32	91.46
D-CU	137.85	0.32	0.50	14.21	14.78	-0.38	-0.82	0.00	0.00	0.00	110.88	0.13	79.96
T-P4	1096.54	0.00	0.00	319.78	462.65	0.00	0.00	0.00	0.00	0.00	314.11	0.36	28.65
O-P4	657.93	0.00	0.00	293.13	12.85	0.00	0.00	0.00	0.00	0.00	351.95	0.41	53.49

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 08/01/85 TO 08/15/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	1169.39	5.65	11.31	790.31	226.71	83.27	61.02	97.13	11.54	0.00	-83.64	0.37	-7.05
SC	766.54	23.76	53.89	675.91	187.30	120.91	51.12	0.00	0.00	0.00	-191.06	0.84	-22.63
SO4	188.78	22.20	47.79	304.91	81.26	68.48	20.13	0.00	0.00	0.00	-216.01	0.95	-83.47
T-FE	2566.14	0.00	0.00	317.88	30.40	43.56	23.67	0.00	0.00	0.00	2150.64	-9.46	83.81
D-FE	73.59	0.00	0.00	38.92	34.12	17.89	4.28	0.00	0.00	0.00	-21.62	0.10	-29.38
T-ZN	1548.65	1.55	1.18	54.22	3.72	-26.23	3.86	0.00	0.00	0.00	1513.79	-6.66	97.58
D-ZN	873.51	0.96	0.87	10.81	40.94	29.05	1.55	0.00	0.00	0.00	792.98	-3.49	90.59
T-CU	611.14	0.42	0.56	47.57	7.44	-119.90	6.71	0.00	0.00	0.00	670.29	-2.95	109.50
D-CU	153.58	0.26	0.53	32.44	14.27	5.01	3.67	0.00	0.00	0.00	98.98	-0.44	64.12
T-P4	1055.89	0.00	0.00	410.87	31.02	0.00	0.00	0.00	0.00	0.00	614.01	-2.70	58.15
O-P4	575.94	0.00	0.00	345.99	18.61	0.00	0.00	0.00	0.00	0.00	211.34	-0.93	36.69

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 08/16/85 TO 08/31/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	829.21	4.76	13.01	606.88	198.66	-83.27	-56.66	193.39	22.27	0.00	-34.30	0.37	-4.05
SC	591.73	20.75	61.19	477.16	278.85	-16.97	-47.59	0.00	0.00	0.00	-17.77	0.19	-2.64
SO4	183.78	19.41	53.76	237.46	64.14	16.88	-18.24	0.00	0.00	0.00	-43.30	0.46	-16.85
T-FE	1127.63	0.00	0.00	260.71	13.59	-22.55	-16.78	0.00	0.00	0.00	892.65	-9.58	79.16
D-FE	86.22	0.00	0.00	24.91	8.15	10.56	-3.28	0.00	0.00	0.00	45.87	-0.49	53.20
T-ZN	939.31	1.43	1.25	63.10	4.89	-45.04	-2.67	0.00	0.00	0.00	921.71	-9.89	97.85
D-ZN	142.94	0.90	0.85	28.23	9.24	20.56	-2.02	0.00	0.00	0.00	88.68	-0.95	61.29
T-CU	285.88	0.35	0.21	19.93	2.72	-122.08	-4.13	0.00	0.00	0.00	390.01	-4.18	136.16
D-CU	117.98	0.25	0.68	31.55	11.42	-4.78	-3.26	0.00	0.00	0.00	83.98	-0.90	70.63
T-P4	952.93	0.00	0.00	232.48	21.74	0.00	0.00	0.00	0.00	0.00	698.70	-7.50	73.32
O-P4	499.15	0.00	0.00	166.06	16.31	0.00	0.00	0.00	0.00	0.00	316.79	-3.40	63.47

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

FLOW &MASS BALANCE FOR 09/01/85 TO 09/15/85

	******INFLOW******			***OUTFLOW***		***STOR***		***EVAP***			***SEEP***		
	SS-19	SS-23	SS-24	PS-12	PS-11A	SS-20	SS-26	PONDS	MARSH	FLATS	FLOW	CONCEN	RATIO-%
FLOW	1271.26	4.46	12.20	864.19	201.42	88.48	56.66	99.66	12.46	0.00	-34.96	0.37	-2.71
SC	1620.46	19.45	57.37	660.63	162.02	72.30	47.74	0.00	0.00	0.00	754.58	-7.94	44.46
SO4	264.36	18.19	50.40	364.15	66.69	26.63	17.68	0.00	0.00	0.00	-142.19	1.50	-42.71
T-FE	3109.71	0.00	0.00	253.01	22.05	35.11	10.39	0.00	0.00	0.00	2789.15	-29.36	89.69
D-FE	97.40	0.00	0.00	14.19	3.31	3.63	2.33	0.00	0.00	0.00	73.94	-0.78	75.92
T-ZN	2233.15	1.34	1.17	63.84	2.20	10.65	1.55	0.00	0.00	0.00	2157.40	-22.71	96.50
D-ZN	796.56	0.84	0.80	11.82	3.31	4.12	2.64	0.00	0.00	0.00	776.32	-8.17	97.26
T-CU	824.39	0.33	0.20	37.83	4.41	3.39	1.55	0.00	0.00	0.00	777.73	-8.19	94.28
D-CU	194.79	0.23	0.63	35.47	8.27	5.08	3.26	0.00	0.00	0.00	143.58	-1.51	73.38
T-P4	1113.09	0.00	0.00	23.65	44.09	0.00	0.00	0.00	0.00	0.00	1045.36	-11.00	93.91
D-P4	417.41	0.00	0.00	118.23	44.09	0.00	0.00	0.00	0.00	0.00	255.09	-2.69	61.11

UNITS

FLOW IN ACRE-FEET
SC IN 1000 LBS AS TDS
SO4 IN 1000 LBS
METALS IN LBS
PO4 IN LBS
CONCEN IN MG/L
RATIO IS %(SEEP/INFLOW)

```
2 REM PROGRAM DELT-STO, FEB. 1986, D. KARP
5 DEFDBL A-A,E-F,P-V
10 DIM P(2),Q(2,200),S(4),F(2),N(2),E(2,18),A(2,18),V(2,18)
15 ON ERROR GOTO 700
20 CLS
30 PRINT:PRINT:PRINT
40 PRINT TAB(9),"THIS PROGRAM CREATES A DATA FILE"
50 PRINT TAB(9),"FOR THE CHANGE IN STORAGE FOR THE"
60 PRINT TAB(9),"WARM SPRINGS PONDS"
70 REM
80 INPUT "DO YOU WISH TO CONTINUE ?(Y/N)";Q$
90 IF Q$<>"Y" GOTO END
100 GOSUB 1000
110 GOSUB 2000
120 OPEN "PONDS" FOR INPUT AS #1
130 C=0
140 C=C+1
150 V1=EOF(1):IF V1=-1 THEN CLOSE #1:END
160 INPUT #1,D$
170 FOR K=1 TO 4:INPUT #1,S(K):NEXT K
180 REM
190 P(1)=4866.15+S(1)
200 P(2)=4830.26+S(2)
240 FOR K=1 TO 2
270 FOR I=1 TO N(K)
300 IF P(K) < E(K,I) GOTO 350
310 NEXT I
330 REM CONVERTING ELEVATIONS TO VOLUMES
350 Q(K,C)=V(K,I-1)+(P(K)-E(K,I-1))*(V(K,I)-V(K,I-1))/(E(K,I)-E(K,I-1))
380 NEXT K
400 IF C<2 THEN 140
410 REM CONVERTING VOLUMES TO FLOW
440 FOR K=1 TO 2
460 F(K)=Q(K,C)-Q(K,C-1)
480 NEXT K
490 F1=F(1)+F(2)
560 LPRINT D$;
570 FOR K=1 TO 2
580 LPRINT USING "########.##";Q(K,C);:LPRINT USING"####.##";F(K);
590 NEXT K
600 LPRINT USING"####.##";F1
650 WRITE #2,D$,Q(1,C),Q(2,C),F(1),F(2),F1
690 GOTO 140
700 CLOSE:END
1000 OPEN "POND3" FOR INPUT AS #1
1010 K=1:N(K)=18
1020 REM ELEVATION & VOLUME DATA FOR POND #3
1030 FOR I=1 TO N(K)
1040 INPUT #1,E(K,I),A(K,I),V(K,I)
1050 NEXT I
1055 CLOSE #1
```

```
1060 K=2:OPEN "POND2" FOR INPUT AS #1:N(K)=8
1070 REM ELEVATION & VOLUME DATA FOR POND #2
1080 FOR I=1 TO 8
1090 INPUT #1,E(K,I),A(K,I),V(K,I)
1095 NEXT I:CLOSE #1:RETURN
2000 OPEN "PONDFLOW" FOR OUTPUT AS #2
2010 LPRINT:LPRINT
2020 LPRINT TAB(9);"PRINTOUT OF PONDS SS-20, SS-26"
2030 LPRINT:LPRINT"   DATE    VOLUME      FLOW    VOLUME    FLOW ↘ FLOW"
2040 LPRINT TAB(12); "SS-20      SS-20    SS-26    SS-26    TOTAL"
2050 RETURN
```

```
5 REM PROGRAM PS-12 FEB. 1986, D. KARP
10 DEFDBL Q-Q
20 DIM Q(200)
40 PRINT:PRINT:PRINT
50 PRINT TAB(9),"THIS PROGRAM CREATES A DATA FILE"
60 PRINT TAB(9),"FOR THE OUTFLOW FROM POND 2"
70 PRINT:PRINT:PRINT
80 INPUT "DO YOU WISH TO CONTINUE ? (Y/N)";Q$
90 IF Q$ <> "Y" GOTO END
100 GOSUB 1000
130 OPEN "A:PONDS" FOR INPUT AS #1
140 C=0
150 C=C+1
155 IF EOF(1)=-1 THEN 300
160 INPUT #1,D$
170 FOR K=1 TO 4:INPUT #1,S(K):NEXT K
190 Q(C)=39.06*S(3)^1.7045
200 Q(C)=1.98346*Q(C)
210 LPRINT TAB(9);D$;:LPRINT USING "######.##";S(3);Q(C)
230 WRITE #2,D$,S(3),Q(C)
240 GOTO 150
300 LPRINT:LPRINT "DSN = OUTPS-12 NO. OF RECORDS = ";C-1
310 CLOSE #1:CLOSE #2:END
1000 REM OPEN OUTPUT FILE AND PRINTOUT TABLE HEADINGS
1020 OPEN "A:OUTPS-12" FOR OUTPUT AS #2
1030 LPRINT:LPRINT
1040 LPRINT TAB(9);"PRINTOUT OF POND #2 DISCHARGE"
1050 LPRINT TAB(13);"PS-12"
1060 LPRINT:LPRINT
1070 LPRINT TAB(5);"   DATE      GAGE     FLOW"
1080 RETURN
```

```
5 REM PROGRAM EVAP, FEB. 1986, D. KARP
10 DEFDBL A-A,E-H,P-V
20 DIM A(2,20),D(3),E(15),H(2,20),N(2),P(15),R(6),S(4),V(2,20),AR(6),ET(2,6)
30 CLS:PRINT:PRINT:PRINT
```

```
40 PRINT TAB(9),"THIS PROGRAM CREATES A DATAFILE"
50 PRINT TAB(9),"FOR THE EVAPORATION FROM THE"
60 PRINT TAB(9),"WARMSPRINGS PONDS **EVAPOR**"
70 PRINT:PRINT
80 INPUT "DO YOU WISH TO CONTINUE ? (Y/N)";Q$
90 IF Q$<>"Y" THEN END
100 GOSUB 1010
110 GOSUB 1500
120 GOSUB 3000
130 PC=.7:REM PAN COEF
140 RF=1!:REM RUNOFF COEF
150 OPEN "PONDS" FOR INPUT AS #1
160 C=1
170 IF EOF(1)=-1 THEN CLOSE:END
180 INPUT #1,D$
190 FOR K=1 TO 4:INPUT #1,S(K):NEXT K
200 D1$=MID$(D$,1,2):D2$ =MID$(D$,4,2):D3$=MID$(D$,7,2)
210 D(1)=VAL(D1$):D(2)=VAL(D2$):D(3)=VAL(D3$)
220 S(1)=4866.15+S(1):S(2)=4830.26+S(2):GOSUB 2000
230 IF D(1)<6 THEN M=14:GOTO 410
240 IF D(1)=6 AND D(2)<6 THEN  M=1:GOTO 410
250 IF D(1)=6 AND D(2)<20 THEN M=2:GOTO 410
260 IF D(1)=6 AND D(2)<27 THEN M=3:GOTO 410
270 IF D(1)=6 AND D(2)<31 THEN M=4:GOTO 410
280 IF D(1)=7 AND D(2)<4  THEN M=4:GOTO 410
290 IF D(1)=7 AND D(2)<10 THEN M=5:GOTO 410
300 IF D(1)=7 AND D(2)<17 THEN M=6:GOTO 410
310 IF D(1)=7 AND D(2)<26 THEN M=7:GOTO 410
320 IF D(1)=7 AND D(2)<32 THEN M=8:GOTO 410
330 IF D(1)=8 AND D(2)<2  THEN M=8:GOTO 410
340 IF D(1)=8 AND D(2)<7  THEN M=9:GOTO 410
350 IF D(1)=8 AND D(2)<20 THEN M=10:GOTO 410
360 IF D(1)=8 AND D(2)<29 THEN M=11:GOTO 410
370 IF D(1)=8 AND D(2)<32 THEN M=12:GOTO 410
380 IF D(1)=9 AND D(2)<5  THEN M=12:GOTO 410
390 IF D(1)=9 AND D(2)<13 THEN M=13:GOTO 410
400 M=14
410 FOR K=1 TO 6:R(K)=0:NEXT K
420 EVP=PC*(E(M)-P(M))/12
430 FOR K=1 TO 3:R(K)=EVP*AR(K):NEXT K
435 R(4)=(ET(1,D(1)-4)*(E(M)+2.7/MN(D(1)-4))-P(M))*AR(4)/12
440 IF D(1)<6 OR D(1)>7 THEN 470
450 IF D(1)=7 AND D(2)>25 THEN 470
460 R(5)=(ET(2,D(1)-4)*(E(M)+2.7/MN(D(1)-4))-P(M))*AR(5)/12
470 R(6)=0
480 LPRINT TAB(9);D$;
490 FOR K=1 TO 6:LPRINT USING "########.##";R(K);:NEXT K
500 LPRINT
510 WRITE #2,D$:FOR K=1 TO 6:WRITE #2,R(K):NEXT K
520 C=C+1
530 GOTO 170
540 END
1010 REM
```

```
1030 REM READ IN ELEV, AREA, VOLUME FOR PONDS
1040 OPEN "POND3" FOR INPUT AS #1
1050 K=1:N(K)=18
1060 FOR I=1 TO N(K)
1070 INPUT #1,H(K,I),A(K,I),V(K,I)
1080 NEXT I
1090 CLOSE #1:IF K=2 THEN RETURN
1100 OPEN "POND2" FOR INPUT AS #1
1110 K=2:N(K)=8
1120 GOTO 1060
1500 REM OPEN OUTPUT FILE EVAPOR AND PRINT TABLE HEADINGS
1510 OPEN "EVAPOR" FOR OUTPUT AS #2
1520 LPRINT:LPRINT:LPRINT TAB(30);"PRINTOUT OF EVAPORATION"
1530 LPRINT:LPRINT TAB(11);"DATE       POND3     POND2    W-POND     MARSH     ";
1535 LPRINT"IRRGT     FLATS"
1540 RETURN
2000 FOR K=1 TO 2
2010 FOR I=1 TO N(K)
2020 IF S(K)<=H(K,I) GOTO 2050
2030 NEXT I
2050 AR(K)=A(K,I-1)+(S(K)-H(K,I-1))*(A(K,I)-A(K,I-1))/(H(K,I)-H(K,I-1))
2060 NEXT K:RETURN
3000 FOR I=1 TO 14:READ E(I),P(I):NEXT I
3010 FOR K=3 TO 6:READ AR(K):NEXT K
3020 FOR I=1 TO 2:FOR K=1 TO 6:READ ET(I,K):NEXT K:NEXT I
3030 FOR K=1 TO 6:READ MN(K):NEXT K:RETURN
3040 DATA .325,0
3050 DATA .325,0
3060 DATA .437,0
3070 DATA .368,0
3080 DATA .392,0
3090 DATA .333,0
3100 DATA .342,0
3110 DATA .275,0
3120 DATA .208,.134
3130 DATA .183,.052
3140 DATA .268,0
3150 DATA .245,0
3160 DATA .155,.074
3170 DATA .087,0
3180 DATA 52.0,80.4,59.4,525
3190 DATA .64,.67,.74,.67,.64,.40
3200 DATA .07,.33,.39,.30,.15,0
3210 DATA 31,30,31,31,30,31
```

```
5 REM PROGRAM MASS, FEB. 1986, D. KARP
10 REM FLOW AND MASS BALANCE WSP
15 WIDTH "LPT1:",132
20 DEFDBL M-M,P-P
30 DIM L$(20),D$(20),P$(20,20),P(20,20),CNST(20),MASS(20,20),C$(20)
```

```
35 DIM SLP1(2,15),SLP2(2,15)
40 CLS:PRINT:PRINT
50 PRINT TAB(9),"THIS PROGRAM CALCULATES"
60 PRINT TAB(9),"FLOW AND MASS BALANCES"
70 PRINT TAB(9),"FOR THE WARM SPRINGS PONDS"
80 PRINT:PRINT "DO YOU WISH TO CONTINUE ? Y-N"
90 PRINT:PRINT
100 INPUT Q$:IF Q$<>"Y" THEN END
110 CLS:PRINT:PRINT:RESTORE
120 PRINT "DO YOU WANT TO :":PRINT
130 PRINT TAB(9),"1 - BALANCE OF COMBINED PONDS"
140 PRINT TAB(9),"2 - BALANCE OF INDIVIDUAL PONDS"
150 PRINT TAB(9),"3 - BALANCE OF PONDS & MILL-WILLOW"
155 PRINT TAB(9),"4 - STOP"
160 INPUT N1:ON N1 GOTO 200,9990,9990,9990
170 PRINT:PRINT:PRINT "INVALID ENTRY - RETRY":GOTO 160
200 CLS:PRINT:PRINT
210 PRINT "ANALYSIS ASSUMING ONE COMBINED POND"
230 PRINT:PRINT:PRINT "CONTINUE ? Y-N"
240 INPUT Q$:IF Q$ <>"Y" THEN 110
250 PRINT:PRINT:PRINT" ENTER THE STARTING AND ENDING DATES"
260 PRINT "FOR EXAMPLE - 06/01/85,06/15/85-":PRINT:PRINT
270 INPUT BD$,ED$:M1=VAL(MID$(BD$,1,2)):D1=VAL(MID$(BD$,4,2))
275 M=M1:D=D1:GOSUB 3000:D1=DD
280 M2=VAL(MID$(ED$,1,2)):D2=VAL(MID$(ED$,4,2))
285 M=M2:D=D2:GOSUB 3000:D2=DD
290 FOR J=1 TO 11:READ C$(J):NEXT J
300 PRINT:PRINT "ENTER THE DSN FOR THE OPPORTUNITY POND DISCHARGES"
310 PRINT "I.E.,SS-23 & SS-24 BETWEEN ";BD$;" AND ";ED$:PRINT
320 INPUT F$:FILE$="A:"+F$
330 PRINT:PRINT
340 PRINT "PLACE DISC W/FILE IN DRIVE A:":PRINT:PRINT
350 READ DT$:M=VAL(MID$(DT$,1,2)):D=VAL(MID$(DT$,4,2))
360 GOSUB 3000:DT=DD:IF DT>D2 THEN 390
370 FOR I=1 TO 2:FOR J=1 TO 11:READ SLP1(I,J):NEXT J:NEXT I
380 GOTO 350
390 FOR I=1 TO 2:FOR J=1 TO 11:READ SLP2(I,J):NEXT J:NEXT I
410 FOR I=1 TO 15
420 FOR J=1 TO 15:P(I,J)=0:NEXT J
430 NEXT I
450 C1=0:GOSUB 1000
460 CLOSE #1
470 PRINT:PRINT
480 PRINT "ENTER THE DSN FOR THE WILDLIFE PONDS DISCHARGE"
490 PRINT "I.E., PS-11A BETWEEN ",BD$;" AND ";ED$:PRINT
500 PRINT:INPUT F$:FILE$="A:"+F$
510 PRINT:PRINT
520 PRINT "PLACE DISC W/FILE IN DRIVE A:":PRINT:PRINT
530 C1=1:GOSUB 1000
540 CLOSE #1
550 PRINT:PRINT:PRINT
560 PRINT "PLACE DISC W/FLOW FILES IN DRIVE A:":PRINT:PRINT
565 P(13,1)=0:P(9,1)=0:P(2,1)=0:P(6,1)=0:P(14,1)=0:P(15,1)=0:P(16,1)=0
```

```
570 GOSUB 2000
580 P(3,1)=(D2-D1+1)*P(3,1)*1.98346
590 P(4,1)=1.98346*P(4,1)*(D2-D1+1)
600 P(12,1)=1.98346*P(12,1)*(D2-D1+1)
610 S$="***":X$="---------------":LPRINT:LPRINT
620 LPRINT TAB(20);"FLOW &MASS BALANCE FOR ";
630 LPRINT BD$;" TO ";ED$
640 LPRINT TAB(14);S$;S$;"INFLOW";S$;S$;"    ";S$;"OUTFLOW";S$;
650 LPRINT"     ";S$;"STOR";S$;"         ";S$;"EVAP";S$;"        ";S$;"SEEP";S$
660 LPRINT TAB(11);"SS-19   SS-23   SS-24   PS-12 PS-11A   SS-20   SS-26   ";
670 LPRINT "PONDS   MARSH  FLATS   FLOW  CONCEN  RATIO-%"
675 LPRINT X$;X$;X$;X$;X$;X$;X$
700 EXPO=.5:S1=P(2,1)/ABS(P(2,1)):S2=P(6,1)/ABS(P(6,1))
710 CNST(1)=1!:CNST(2)=.0018158:CNST(3)=.0027362
720 FOR J=4 TO 11:CNST(J)=2.7362:NEXT J
730 FOR J=1 TO 11:IF J>1 THEN EXPO=1:S1=1:S2=1
740 MASS(1,J)=(P(9,1)*P(9,J))^EXPO*CNST(J):PRINT MASS(1,J):REM SS-19
750 MASS(2,J)=(P(3,1)*P(3,J))^EXPO*CNST(J):PRINT MASS(2,J):REM SS-23
760 MASS(3,J)=(P(4,1)*P(4,J))^EXPO*CNST(J):PRINT MASS(3,J):REM SS-24
770 MASS(4,J)=(P(13,1)*P(13,J))^EXPO*CNST(J):PRINT MASS(4,J):REM PS-12
780 MASS(5,J)=(P(12,1)*P(12,J))^EXPO*CNST(J):PRINT MASS(5,J):REM PS-11A
790 MASS(6,J)=S1*(P(2,1)*P(2,J))^EXPO*CNST(J):PRINT MASS(6,J):REM SS-20(STOR)
800 MASS(7,J)=S2*(P(6,1)*P(6,J))^EXPO*CNST(J):PRINT MASS(7,J):REM SS-26(STOR)
802 IF J=1 THEN 810
804 MASS(6,J)=MASS(6,J)+VF1*(SLP2(1,J)*(D2-D3)-SLP1(1,J)*(D1-D3))*CNST(J)
806 MASS(7,J)=MASS(7,J)+VF2*(SLP2(2,J)*(D2-D3)-SLP1(2,J)*(D1-D3))*CNST(J)
810 MASS(8,J)=(P(14,1)*P(14,J))^EXPO*CNST(J):PRINT MASS(8,J):REM SS-20(EVAP)
820 MASS(9,J)=(P(15,1)*P(15,J))^EXPO*CNST(J):PRINT MASS(9,J):REM SS-26(EVAP)
830 MASS(10,J)=(P(16,1)*P(16,J))^EXPO*CNST(J):PRINT MASS(10,J):REM RUNOFF
840 MASSIN=MASS(1,J)+MASS(2,J)+MASS(3,J)
850 MASSOUT=MASS(4,J)+MASS(5,J)
860 MASSSTR=MASS(6,J)+MASS(7,J)
870 MASSEVP=MASS(8,J)+MASS(9,J)-MASS(10,J)
880 MASS(11,J)=MASSIN-MASSOUT-MASSSTR-MASSEVP:PRINT MASS(11,J)
883 MASS(12,J)=.368*MASS(11,J)/MASS(11,1)
887 MASS(13,J)=MASS(11,J)/MASSIN*100:NEXT J
890 FOR J=1 TO 11
900 LPRINT TAB(5);C$(J);:FOR I=1 TO 13
905 LPRINT USING"######.##";MASS(I,J);: REM /(D2-D1+1);:REM NEXT I
910 REM FOR I=11 TO 12:LPRINT USING"######.##";MASS(I,J);
920 NEXT I:LPRINT:NEXT J
925 LPRINT:LPRINT TAB(9);"UNITS"
930 LPRINT TAB(9);"-----"
935 LPRINT TAB(9);"FLOW IN ACRE-FEET  "
940 LPRINT TAB(9);"SC IN 1000 LBS AS TDS"
945 LPRINT TAB(9);"SO4 IN 1000 LBS"
950 LPRINT TAB(9);"METALS IN LBS "
955 LPRINT TAB(9);"PO4 IN LBS "
960 LPRINT TAB(9);"CONCEN IN MG/L"
965 LPRINT TAB(9);"RATIO IS %(SEEP/INFLOW)":GOTO 110
1000 REM SUBROUTINE TO OPEN WQ FILES AND READ DATA
1003 PRINT:PRINT:PRINT"PRESS ANY KEY TO CONTINUE":PRINT:PRINT
1007 A$=INKEY$:IF A$="" THEN 1007
```

```
1010 OPEN FILE$ FOR INPUT AS #1
1030 II=1+C1*8
1040 NN=8+C1*5
1060 FOR I=II TO NN
1070 INPUT #1,L$(I),D$(I)
1073 M=VAL(MID$(D$(I),1,2)):D=VAL(MID$(D$(I),4,2)):GOSUB 3000:D3=DD
1075 IF D1>D3 OR D2<D3 GOTO 1200
1080 FOR J=1 TO 11:INPUT #1,P$(I,J):L1%=LEN(P$(I,J))
1085 IF L1%=0 THEN 1140
1090 Q$=MID$(P$(I,J),L1%,1):IF Q$<>"*" GOTO 1110
1100 P$(I,J)=MID$(P$(I,J),1,L1%-1)
1110 Q$=MID$(P$(I,J),1,1):IF Q$<>"<" GOTO 1130
1120 P$(I,J)=MID$(P$(I,J),2)
1130 P(I,J)=VAL(P$(I,J))
1132 IF I<>2 AND I<>6 THEN 1140
1134 IF I=2 THEN K=1 ELSE K=2
1136 P(I,J)=P(I,J)+SLP1(K,J)*(D1-D3)
1140 NEXT J
1150 NEXT I:RETURN
1200 FOR J=1 TO 11:INPUT #1,P$(I,J):NEXT J
1205 PRINT:PRINT:PRINT
1210 PRINT "THIS FILE IS NOT COMPATABLE WITH START & END DATES":PRINT
1220 GOTO 300
2000 REM SUBROUTINE TO READ IN DAILY FLOW DATA
2005 PRINT:PRINT:PRINT"PRESS ANY KEY TO CONTINUE":PRINT
2010 A$=INKEY$:IF A$="" THEN 2010
2020 DS$(1)="OUTPS-12":DS$(2)="PONDFLOW":DS$(3)="EVAPOR"
2030 DS$(4)="SS19FLOW.WSP"
2050 FOR I=1 TO 4
2060 FILE$="A:"+DS$(I)
2070 OPEN FILE$ FOR INPUT AS #1
2080 IF I=1 THEN JJ=2:II=13:GOTO 2140
2090 IF I=2 THEN JJ=5:II=6:GOTO 2140
2100 IF I=3 THEN JJ=6:II=15:GOTO 2140
2110 IF I=4 THEN JJ=1:II=9:GOTO 2140
2140 INPUT #1,D$
2150 FOR J=1 TO JJ:INPUT #1,Q(I,J):NEXT J
2155 M=VAL(MID$(D$,1,2)):D=VAL(MID$(D$,4,2))
2160 GOSUB 3000:D=DD
2170 IF M1>M GOTO 2140
2180 IF M2<M GOTO 2280
2190 IF D1>D GOTO 2140
2200 IF D2<D GOTO 2280
2210 IF I=1 OR I=4 THEN 2240
2215 IF I=3 THEN 2250
2220 KK=II-(JJ-1)/(I-1)
2225 VF1=Q(I,1):VF2=Q(I,3)
2230 P(KK,1)=P(KK,1)+Q(I,JJ-1):PRINT P(KK,1)
2240 P(II,1)=P(II,1)+Q(I,JJ):PRINT P(II,1):GOTO 2140
2250 P(14,1)=P(14,1)+Q(3,1)+Q(3,2)+Q(3,3)
2260 P(15,1)=P(15,1)+Q(3,4)+Q(3,5)
2270 P(16,1)=P(16,1)+Q(3,6):GOTO 2140
2280 CLOSE #1:NEXT I
```

```
2300 P(9,1)=1.98346*P(9,1)
2310 STOR=P(6,1):P(6,1)=P(2,1):P(2,1)=STOR-P(6,1)
2320 REM EVP=P(15,1):P(15,1)=P(14,1):P(14,1)=EVP-P(15,1)
2350 RETURN
3000 REM**** SUBROUTINE TO DETERMINE DAY NUMBER ****
3005 DD=0
3010 IF M>2 THEN 3040
3020 DD=INT((M-1)*31.5)
3030 GOTO 3050
3040 DD=INT((M+1)*30.6)-63
3050 DD=DD+D
3060 RETURN
9010 DATA "FLOW","  SC"," SO4","T-FE","D-FE","T-ZN","D-ZN"
9020 DATA "T-CU","D-CU","T-P4","O-P4"
9030 DATA "06/05",0,-.571,.0357,-.00571,-.000643,.0025,.00143,-.00186,0,0,0
9040 DATA 0,-1.571,.357,.0114,.001,-.00143,.000786,-.0005,0,0,0
9050 DATA "06/19",0,-1.714,.0357,-.00679,-.0000714,-.00514,-.00236,-.00186,0,0,0
9060 DATA 0,.714,.5,-.0169,.00214,.00207,-.00121,-.00221,0,0,0
9070 DATA "07/07",0,2.,.114,.000286,-.000286,.000514,.000114,.000514,0,0,0
9080 DATA 0,.971,-.0571,-.00123,-.000571,-.000514,0,.000971,0,0,0
9090 DATA "07/24",0,2.,.114,.000286,-.000286,.000514,.000114,.000514,0,0,0
9100 DATA 0,.971,-.0571,-.00123,-.000571,-.000514,0,.000971,0,0,0
9110 DATA "08/06",0,.611,.333,.0000833,.000111,-.000278,.000194,-.000944,0,0,0
9120 DATA 0,.111,-.278,-.00317,-.000472,-.000556,.000306,-.00128,0,0,0
9130 DATA "08/29",0,.611,.333,.0000833,.000111,-.000278,.000194,-.000944,0,0,0
9140 DATA 0,.111,-.278,-.00317,-.000472,-.000556,.000306,-.00128,0,0,0
9150 DATA "09/09",0,0,0,0,0,0,0,0,0,0,0
9160 DATA 0,0,0,0,0,0,0,0,0,0,0
9170 DATA "09/16",0,0,0,0,0,0,0,0,0,0,0
9180 DATA 0,0,0,0,0,0,0,0,0,0,0
9990 END
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DRAFT

ATTACHMENT VIII

POND BOTTOM SEDIMENT ANALYSES

SILVER BOW CREEK CERCLA 07/08/86

WARM SPRINGS PONDS BOTTOM SAMPLE DATA

STATION	SAMPLE DATE	SAMPLE TIME	LAB NUMBER	SAMPLING METHOD	PHYSICAL PARAMETERS Water tempera- ture (C)	Field pH	Specific Conductance (umhos/cm)	Dissolved Oxygen	EH (MV)	COMMENTS
SS-26 #1	03/28/85	0945	S-135	SOIL AUGER	6.0	7.8	571	0.4	-130	POND BOTTOM SAMPLE
SS-26 #2	03/28/85	1105	S-136	SOIL AUGER	4.0	7.7	332	0.4	-170	POND BOTTOM SAMPLE
SS-26 #3	03/28/85	1145	S-137	SOIL AUGER	5.0	7.5	491	0.4	-300	POND BOTTOM SAMPLE
SS-26 #4	03/28/85	1215	S-138	SOIL AUGER	7.0	7.5	556	2.0	-370	POND BOTTOM SAMPLE - DUPE
SS-20 #1	04/16/85	1030	S-139	SOIL AUGER	8.0	7.8	686	0.4	-230	POND BOTTOM SAMPLE
SS-20 #2	04/16/85	1100	S-141	SOIL AUGER	7.0	7.9	1360	0.4	-290	POND BOTTOM SAMPLE
SS-20 #3	04/16/85	1050	S-140	SOIL AUGER	8.0	7.9	1030	0.5	-240	POND BOTTOM SAMPLE - DUPE
SS-26 #1	04/24/85	1608	S-144	SOIL AUGER	5.5	7.9	572	1.0	-390	POND BOTTOM SAMPLE
SS-26 #2	04/24/85	1500	S-145	SOIL AUGER	6.0	7.8	267	0.9	-315	POND BOTTOM SAMPLE
SS-26 #3	04/24/85	1420	S-146	SOIL AUGER	6.0	7.8	434	1.0	-310	POND BOTTOM SAMPLE
SS-26 #4	04/24/85	1520	S-147	SOIL AUGER	6.0	7.8	291	1.0	-390	POND BOTTOM SAMPLE - DUPE
SS-20 #1	05/08/85	0930	S-148	SOIL AUGER	10.0	8.7	668	0.2	-320	POND BOTTOM SAMPLE
SS-20 #2	05/08/85	0945	S-149	SOIL AUGER	12.0	7.9	390	0.3	-410	POND BOTTOM SAMPLE
SS-20 #3	05/08/85	1030	S-150	SOIL AUGER	10.0	9.0	1010	0.2	-300	POND BOTTOM SAMPLE - DUPE

NOTE: Units are mg/l unless otherwise noted.

BOTTOM SEDIMENTS

STATION	SAMPLE DATE	SAMPLE TIME	Percent Solids	Percent TOC	Arsenic Total	Cadmium Total	Copper Total	Lead Total	Iron Total	Zinc Total
SS-26 #1	03/28/85	0945	24.5	0.93	73.6	42.9	1960	77.9	22400	5540
SS-26 #2	03/28/85	1105	20.7	0.99	36.0	46.0	1030	30.0	21100	5930
SS-26 #3	03/28/85	1145	64.6	0.66	176	8.53	346	639	27100	391
SS-26 #4	03/28/85	1215	65.5	0.40	185	7.98	333	555	41300	352
SS-20 #1	04/16/85	1030	20.4	1.43	81.0	43.8	1150	48.4	21000	4750
SS-20 #2	04/16/85	1100	17.5	1.15	81.8	41.5	1150	44.0	20800	6200
SS-20 #3	04/16/85	1050	16.8	0.71	112	7.79	191	8.62	3910	9100
SS-26 #1	04/24/85	1608	39.9	0.87	128	40.7	2640	197	34600	5880
SS-26 #2	04/24/85	1500	26.8	1.24	91.5	34.8	1200	80.0	16600	3550
SS-26 #3	04/24/85	1420	41.8	2.89	124	10.5	504	382	22400	1000
SS-26 #4	04/24/85	1520	25.3	2.13	92.0	35.9	1310	83.3	17000	3570
SS-20 #1	05/08/85	0930	15.9	0.73	66.5	35.9	981	34.8	17600	4820
SS-20 #2	05/08/85	0945	20.6	0.99	68.8	31.5	949	40.8	16100	3790
SS-20 #3	05/08/85	1030	12.0	0.18	30.3	34.2	827	17.0	16700	3870

NOTE: Units are micrograms/gram (wet basis) unless otherwise noted.

STATION	SAMPLE DATE	SAMPLE TIME	FILTERED Sulfate	BOTTOM Total Alkalinity as CaCO3	SEDIMENTS Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hardness as CaCO3	Arsenic Dissolved	Cadmium Dissolved	Copper Dissolved	Lead Dissolved	Iron Dissolved
SS-26 #1	03/28/85	0945	181	198	198	0	450(1)	0.866(1)	22.8(1)	0.517(1)	0.861(1)	249(1)
SS-26 #2	03/28/85	1105	151	213	213	0	323(1)	0.503(1)	0.447(1)	10.4(1)	0.332(1)	223(1)
SS-26 #3	03/28/85	1145	124	169	169	0	373(1)	2.03(1)	0.085(1)	3.35(1)	5.92(1)	304(1)
SS-26 #4	03/28/85	1215	159	125	125	0	451(1)	1.96(1)	0.092(1)	3.94(1)	5.61(1)	365(1)
SS-20 #1	04/16/85	1030	137	(4)	(4)	(4)	298(2)	0.0094(2)	<.0003(2)	0.014(2)	0.0023(2)	0.066(2)
SS-20 #2	04/16/85	1100	1520	(4)	(4)	(4)	1380(2)	0.0040(2)	<.0003(2)	<0.011(2)	0.0025(2)	0.041(2)
SS-20 #3	04/16/85	1050	1360	(4)	(4)	(4)	1300(2)	0.0040(2)	<.0003(2)	<0.011(2)	0.0028(2)	0.165(2)
SS-26 #1	04/24/85	1608	200	(4)	(4)	(4)	333(3)	0.015(3)	.00090(3)	0.094(3)	0.0049(3)	0.446(3)
SS-26 #2	04/24/85	1500	103	(4)	(4)	(4)	261(3)	0.020(3)	<.0003(3)	0.014(3)	<0.001(3)	0.209(3)
SS-26 #3	04/24/85	1420	5.0	(4)	(4)	(4)	346(3)	0.031(3)	.00060(3)	<0.011(3)	0.0026(3)	0.477(3)
SS-26 #4	04/24/85	1520	90	(4)	(4)	(4)	298(3)	0.031(3)	.00080(3)	<0.011(3)	<0.001(3)	0.307(3)
SS-20 #1	05/08/85	0930	958	73	73	0	938(1)	0.0083(1)	.00050(1)	<0.011(1)	<0.001(1)	<0.010(1)
SS-20 #2	05/08/85	0945	128	383	383	0	622(1)	0.026(1)	.00050(1	<0.011(1	<0.001(1	<0.010(1
SS-20 #3	05/08/85	1030	1630	13	13	0	1540(1)	<.0073(1)	0.0016(1)	<0.011(1)	<0.001(1)	<0.010(1)

NOTES: (1) Supernatant digested, filtered, analyzed.
(2) Supernatant analyzed.
(3) Supernatant filtered, analyzed.
(4) Filtrate was acidified.
Units are mg/l unless otherwise noted.

STATION	SAMPLE DATE	SAMPLE TIME	FILTERED BOTTOM SEDIMENTS Zinc Dissolved	POND Density	BOTTOM SLURRY Percent Solids
SS-26 #1	03/28/85	0945	49.3(1)	1.064	13.6
SS-26 #2	03/28/85	1105	51.6(1)	1.042	11.4
SS-26 #3	03/28/85	1145	3.10(1)	1.563	57.3
SS-26 #4	03/28/85	1215	5.33(1)	1.481	55.8
SS-20 #1	04/16/85	1030	0.013(2)	1.098	14.8
SS-20 #2	04/16/85	1100	0.0060(2)	1.065	13.5
SS-20 #3	04/16/85	1050	0.0080(2)	1.057	11.8
SS-26 #1	04/24/85	1608	0.540(3)	1.226	27.6
SS-26 #2	04/24/85	1500	0.074(3)	1.062	17
SS-26 #3	04/24/85	1420	0.069(3)	1.283	19.0
SS-26 #4	04/24/85	1520	0.082(3)	1.096	15.9
SS-20 #1	05/08/85	0930	0.004(1)	1.110	13.8
SS-20 #2	05/08/85	0945	0.0040(1	1.096	14.7
SS-20 #3	05/08/85	1030	<0.003(1)	1.059	10.4

NOTES: (1) Supernatant digested, filtered, analyzed.
(2) Supernatant analyzed.
(3) Supernatant filtered, analyzed.
Units are mg/l unless otherwise noted.

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ATTACHMENT IX

SC SURVEY OF THE MILL-WILLOW BYPASS

ATTACHMENT IX
SC SURVEY OF THE MILL WILLOW BYPASS

STATION	TEMPERATURE (C)	SC's
SS-18	16	E 377, 341, 341, 341, 341, 341, 341 W
30 m E. of I-90	16	E 345, 343, 343, 342, 343, 343 W
200 m downstream	16	E 350, 348, 347, 345, 345, 345 W
Below yellow pitch	16	E 350, 351, 354, 355, 355, 354 W
Point source 30 m downstream on west bank	12	W 1890
15 m downstream	16	E 381, 368, 367, 363, 362, 356 W
Point source 7 m downstream on east bank	17	E 681
Point source 3 m downstream on east bank	17	E 844
150 m downstream	16	E 370, 372, 372, 372, 372, 393, 429 W
Point source 3 m downstream on east bank	15	E 1750
SS-18A	16	E 429, 409, 396, 395, 395, 396, 397 W
150 m downstream	16	E 396, 396, 396, 396, 396, 396 W
200 m downstream	16	E 407, 409, 409, 409, 409, 411, 412, 422, 482 W

ATTACHMENT IX
SC SURVEY OF THE MILL WILLOW BYPASS
(continued)

STATION	TEMPERATURE (C)	SC's
100 m downstream	16	E 407, 412, 416, 416, 416, 416, 502 W
10 m downstream	16	E 416, 416, 416, 416, 416, 421 W
Above S. Opportunity Pond Q	16	E 416, 416, 416, 416, 416, 416 W
Below S. Opportunity Pond Q	16	E 416, 420, 420, 422, 424, 425 W
50 m downstream	17	E 416, 416, 416, 421, 422, 424 W
50 m downstream	17	E 422, 422, 421, 420, 421, 421 W
100 m downstream	16	E 424, 429, 428, 424, 433, 461, 487 W
300 m downstream	17	E 454, 456, 457, 467, 470, 470 W
Above N. Opportunity Pond Q	16	E 463, 474, 478, 488, 498, 502 W
Point source at N. Opportunity Pond Q, west band	15	W 2570
Below N. Opportunity Pond Q	17	E 441, 469, 487, 492, 518, 681, 779 W
200 m downstream	16	E 535, 482, 488, 495, 528, 541 W
Point source 50 m downstream on west bank	16	1440

ATTACHMENT IX
SC SURVEY OF THE MILL WILLOW BYPASS
(continued)

STATION	TEMPERATURE (C)	SC's
Point source 50 m downstream on east bank	16	792
50 m downstream	16	E 517, 516, 520, 554, 553 W
Point source 5 m downstream on west bank	17	2600
50 m downstream	16	E 517, 523, 528, 553, 561, 568 W
200 m downstream	17	E 519, 522, 531, 545, 571 W
SS-18C	17	E 558, 544, 539, 546, 565, 597 W
400 m downstream	17	E 565, 571, 572, 584, 600 W
400 m downstream	18	E 608, 610, 620, 632, 632 W
Point source 20 m downstream on east bank	17	E 597
SS-18D	16	640, 649, 660, 660 W
50 m below bridge	17	E 600, 649, 649, 662, 649 W
Point source 30 m above Wildlife discharge E. bank	18	E 632
Above Wildlife discharge	17	E 649, 649, 649, 649 W
Wildlife discharge	17	NE 422, 448, SW
Below Wildlife discharge	17	E 493, 498, 522, 558, 649 W

ATTACHMENT IX
SC SURVEY OF THE MILL WILLOW BYPASS
(continued)

STATION	TEMPERATURE (C)	SC's
Point source below Wildlife discharge E. bank	18	E 531
Point source below Wildlife discharge W. bank	16	W 1584
200 m downstream	18	E 582, 588, 595, 597, 601 W
400 m above SS-25	18	E 597, 606, 601, 632, 632 W
Point source above SS-25 on east bank	16	E 660
SS-25	18	E 617, 620, 622, 632, 664 W